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THE INDIAN ECONOMIC JOURNAL

VOLUME VIII JANUARY 1961 NUMBER THREE

TENDENCIES IN ECONOMIC THEORY*

"In any science which has failed to produce any theory with a sufficient scope of application, progress is necessarily very slow." WHITEHEAD

I

I propose in this address to dwell on certain broad tendencies in Economic Theory. The subject is somewhat removed from the many practical problems that are confronting the country today. My plea for choosing it is that it is refreshing and perhaps profitable also once in a while to stand aside, so to say, and to take a view of the general shape of our science as it assumes under the impact of economic happenings. Economic theory does not grow *in vacuo*. Surely it is a reflection of contemporary events. Yet while events are discrete and transient, 'theory' generalises and its appeal abides.

Economic theory—in the form in which we have it today—is just about two hundred years old. Considering its age, it has made remarkable progress. We have travelled far since the days of the pioneers. There is hardly any field of economic theory which has escaped some kind of reformulation or retouching at some stage in its career over the last century and a half. Yet who among us would have the temerity to suggest, despite all the developments that have taken place in this or that field, that we have succeeded as yet to hit upon a determinate goal which economic theory is expected to lead up to? We have travelled far, but we have not always travelled along routes that are convergent. We have had 'epochs' of economic theory—Classical, Marginalist and Modern—each having a distinct terrain, and not quite assimilated into the other.

There is indeed a certain lack of continuity in the development of economic theory. The reason for this is perhaps partly political. Partly also it must lie in the very nature of our science. The function of economic theory is to raise questions concerning economic phenomena as they emerge in society from time to time, and to indicate the mode of answering them. The character of economic theory is thus moulded by the type of questions that assume importance in a given environmental setting—though it is of the nature of "theory" that once it is derived, it takes a form which makes it transcend the particular setting that gives it birth.

*Presidential Address to the *43rd Annual Conference of the Indian Economic Association*, at Chandigarh, December, 1960.

Why do prices rise ? How do trade restrictions affect the prices of goods and the economy as a whole ? What is the significance of a market for the development of an economy ? How do movements of prices affect the earnings of different classes of a society—and how does distribution of wealth in its turn affect economic growth ? What sort of relation exists between the growth of wealth and the growth of numbers ? These are some of the questions that cropped up in England in the late eighteenth century and early nineteenth, as she was passing through a stage of what is known as Industrial Revolution. Attempts at answering quesions such as these with reference to the particular setting in which they arose gave birth to Classical Political Economy. Man's struggle against nature and his triumph in securing higher standards of living, impediments to progress created by injudicious regulatory laws, the dampening effect of population growth, the possible conflict in social relations that the process of growth tends to generate—these constitute the background against which the classical system developed, and it is against this background that classical theories have to be seen if they are to be judged properly.

Here was a small island, already commercially developed, which was in the midst of large scale technological innovations, supported by a spirit of enterprise never before experienced elsewhere, where population was growing fast and pressing on the 'means of subsistence', where the unbalance thus created between the price of agriculture and the price of manufacture was further accentuated by restrictions on the import of corn and other mercantilist devices. The problem was to show the way how the spirit of enterprise that was released in the wake of the industrial revolution might have full play, and adequate resources might be mobilised to give effect to all the technical progress that had been taking place in the field of manufactures. In this perspective the characteristic classical theories would all appear to fall into their places. Combine Smith's theory of division of labour with the Ricardian theory of rent and the Malthusian theory of population, and you have *via* the labour theory of value an explanation of the movement of 'corn' prices *vis-a-vis* manufactures. Follow it up with the classical theory of surplus, conceived either in terms of Smith's 'productive labour' or in terms of Ricardo's 'net revenue', and you have the role of capital as the determinant of economic progress. The theory of foreign trade comes in as part of the system in so far as extension of the market, like innovations, tends to keep up the volume of investible surplus and hence of capital.

The initial impulse to progress comes from saving. Where enterprise exists, the saving that generates in the economy is turned towards the formation of capital. Income increases and with it the investible surplus. There is, however, the retarding effect of growth of numbers, the degree of retardation depending upon the relative rates

of capital accumulation and population growth. If accumulation and, with it, innovations proceed at a pace fast enough to overbear the retarding effect of population growth, the economy progresses. If it does not, the economy stagnates.

Here there is a parting of ways. Adam Smith envisages a progressive economy with his eyes fixed on technological innovations and division of labour, while Ricardo is apparently depressed by the prospects of diminishing returns in agriculture, rising cost of labour and falling rate of profit.

Now, whatever the approach, the policy implication was the same. The market must be widened through free trade—on Adam Smith's argument because a wider market would offer greater scope for division of labour, while on Ricardo's because an extension of foreign trade, in so far as it facilitated the import of 'corn' would reduce wages and raise profits. Classical theory thus not only provided answers to the specific problems that England faced at the time, it also suggested policy prescriptions which played an important part in reorienting its economy to suit the circumstances. The economy needed free trade and Theory rationalised it.

The classical system evolved in a particular setting provided by the country of its origin, and it is often contended that its significance is confined to the limits of that particular setting. "Classical theory flowered on the British soil; would it not wither elsewhere?" is a question which is very often asked. Because of its association with a policy which was found inappropriate in other countries with dissimilar conditions, classical theory itself became suspect. Now this is a mistake. It is not enough to show certain obvious limitations of the Torrens-Ricardo comparative cost theory,—although even there, with slight modifications to allow for non-labour costs, the theory can perhaps be used as an 'explanatory hypothesis' in relation to a short period over which fundamental changes do not occur. As a guide to policy the theory undoubtedly is deceptive.

To get at the more significant element of the classical theory of foreign trade one must go further back to Adam Smith. In spite of its subsequent recogniton as the classical theory, the doctrine of comparative costs just does not fit in with the general framework of classical economics. The doctrine of comparative costs is based on a static, 'constant return' assumption, whereas classical economics is moulded in a dynamic framework and does allow for increasing returns. Classical economics has suffered in prestige considerably on account of its apparent association with a doctrine which takes no account of the possibility of increasing returns. For you cannot properly explain the secular movement of international trade except in terms of increasing returns. Adam Smith perceived it. In his famous dictum

—"Division of labour is limited by the extent of the market"—you have a proposition which is perfectly general, not only as an explanation of the phenomena of international trade but also as a guide to policy.[1] Consider a country which exhibits conditions unlike those that the classical economists postulated—a country big in size, exporting 'corn' and importing manufactures. Here it is the presence of foreign trade—the import of low cost manufactures—that limits the scope of division of labour. For such a country the policy prescription that emerges from the Smithian doctrine is Protection, not Free Trade. If 'theories are nets',[2] one must know how to cast, if one is to catch.

II

Challenge to classical theory came not from 'outside', but from 'within'—not from the Historical School nor from the Socialists, but from the Marginalists. The socialists, including Karl Marx, built on classical theory, while the Historical School repudiated theory altogether. It is the Marginalists who diverted economic theory away from the main stream, concentrating chiefly on value and resource allocation. And even here it was no longer a problem of variations in absolute values over time and their impact upon society but a problem of 'relative prices' seen as functioning within the framework of an impersonal, self-adjusting economic system. So pronounced was this deviation that with the emergence of marginalism the problems that evoked classical economics came very nearly to be forgotten. It is only in recent years, partly under the impact of post-Keynesian 'growth' economics and partly due to the urgency created by a more intimate appreciation of the problem of what Myrdal calls 'international economic integration' that the older sights are reappearing.

The advent of marginalism did indeed mark a revolution in economic theory. The old terms no doubt continue to be used, but they have lost their old connotation. Not only is a new technique introduced into economic analysis, but the structure and content of economic theory have also received a new orientation. Value has ceased to be an absolute, measurable entity; it has become a ratio of

[1] Professor J. R. Hicks, who certainly could not be accused of being unsympathetic to Ricardian Economics, goes to the length of saying in one of his recent essays: "It is impossible to make sense of the phenomena of international trade unless one lays great stress upon *increasing returns*; and this is particularly important, because of the close connection between increasing returns and accumulation of capital." (*Essays* in *World Economics*: Oxford, 1959, p. 188.). It is as if Adam Smith is speaking—for what else is 'division of labour' but a medium for the operation of Increasing Returns? One should, however, be careful not to confuse this with Torrens' 'territorial division of labour', which is another name for comparative costs and which only refers to 'allocation of resources', not to 'technique' of production.

[2] Popper: *The Logic of Scientific Discovery* (Hutchinson, London 1959) Chapter III, p. 59.

exchange, without a dimension.[3] Distribution appears as an extension of the theory of value—being just a problem of pricing of factors of production. The two aspects of the economic problems are then integrated into a unified and logically self-consistent system. Value of commodities is derived in the ultimate analysis from utility and has to be seen at the margin. Value of factors is derived from productivity at the margin imputed by the commodities which they help in producing. The old tripartite division of 'factors' into land, labour and capital is retained, but their old association with social 'classes' (or 'orders of society', as Adam Smith would put it) is lost. Factors are conceived just as productive agents independently of the institutional framework within which they operate. The concepts of Cost and Surplus thus cease to have the significance that they acquired in classical political economy. Cost stands for 'opportunity surrendered', and Surplus turns out to be an excess of the actual income of a factor over its transfer price. Whereas in the classical system these concepts were used as criteria for the evaluation of the economic progress of a society—indeed the labour theory of value derives whatever significance it has from just this consideration, in the new system they are used as criteria for judging allocative efficiency, their application being confined primarily to the sphere of taxation.

The marginal technique was designed to bring out the principle of maximisation that is supposed to characterise rational conduct. In the equation of the price ratio of goods with their marginal utility ratio there is the fulfilment of maximum principle in respect of consumer's expenditure. And in the equation of the price ratio of factors with the marginal productivity ratio we have a similar fulfilment of maximum principle in respect of the firm's choice of technique of production. Precisely the same principle is postulated in respect of the allocation of resources where it expresses itself in an equation between the price ratio and marginal cost ratio of products.

The entire analysis proceeds on the basis of the principle of substitution. Economic phenomena are manifestations of choice exercised by consumers and producers in respect of the disposal of scarce resources, and the phenomenon of choice in human behaviour is inseparably associated with the phenomenon of substitution. The principle of choice and substitution is thus fundamental in the marginalist system of economic theory. The system is worked out within the framework of a static economy,—population, tastes, technology and resources being all held as data. This surely is in sharp contrast with the classical approach which is set out against the background of a growing economy, where the dynamic determinants

[3] See Jevons : *The Theory of Political Economy* (4th edition), p. 88.

such as accumulation of capital, technical progress and growth of population are shown as integral parts of the analytical model. How pronounced the cleavage is between the two systems is seen from the fact that whereas Adam Smith's enquiry was into the nature and causes of the Wealth of Nations, one of the modern exponents of the marginalist system goes to the length of urging that 'in strict delimitation of economic science' the term Wealth should be discarded.[4]

It must be a puzzle to the historian of economic thought how economic theory should have taken such a sharp turn away from the classical direction and why the initiative should have come at the same time from three different centres, as it did.

The sociology of scientific discovery is a complicated subject, and no single explanation of the phenomenon would perhaps be deemed adequate. Shift of events could hardly explain it. It is not the Ricardian 'stationary state' into which the new technique was projected, although it is there that it legitimately belongs. In fact, if economic events were the determining factor, we might have in the post-classical period a theory of crisis rather than a theory of static equilibrium. For as sequel to the industrial revolution, the countries of the West had already started experiencing the 'paradox of poverty in plenty' and the period 1873-98 during which the marginalist school established itself was marked by a slump so conspicuous as to have earned the title Great Depression.

One would perhaps be inclined to put the emergence of the marginal principle as an instance of 'pure reason'; indeed there is something in the analytic vision displayed in the system of at least one of the leaders of the school—Walras—which lends strong support to this view. Here too one would find it difficult to explain why different centres could have seen the same light at the same time. Nor is it easy to see what made it possible for the new doctrine to get so readily absorbed in the corpus of economic theory. Others had seen the light before—Llyod and Dupuit and Gossen, for example,—and they went into wilderness. Jevons, Menger and Walras, on the other hand, just 'came and conquered.'

The discovery (or, as one would prefer to say, rediscovery) of the marginal utility principle and the associated development of economic theory could not surely be an isolated scientific phenomenon There must have been some sort of provocation somewhere. And one cannot help suspecting that the provocation was largely political; the connection between the emergence of the marginal utility school and the 'political' side of the teachings of Karl Marx seems to be

[4] Lionel Robbins, *The Nature and Significance of Economic Science* (Second Edition), Chapter III, p. 47n.

too close to be ignored. Marginalism came up, so to say, to 'save' economic theory from being turned into an engine of class-war. In breaking away from Classical Political Economy it bid fair to destroy the theoretical foundation of the *Communist Manifesto*. In the theory of Exchange and Distribution, the Marginalist School offered an alternative explanation of social relations which cut across 'classes' and was designed as a counter to Marxist political propaganda. The switch-over from 'accumulation' to 'consumption' as the mainspring of economic activity, the principle of maximization in the analysis of consumer's behaviour, the consistency theorem relating to individual maxima in the analysis of equilibrium of exchange, the marginal productivity principle of distribution, the application of Euler's theorem to the solution of the so-called 'adding up' problem—implicit in all these is one long refutation of the Marxist theory of class-war and a plea for economic liberalism. If the marginalists were anti-classical[5] in their economic theorising, they were overwhelmingly classical in their political predilections.[6]

Now, whatever may be the impulse that stimulated the discovery of the marginal utility principle, there can be little doubt about its significance for the development of economic theory. For over sixty years since the marginalist revolution, economists have kept busy refining and sharpening the 'technique' of analysis which it opened up, and within its limited frame of reference, the technique has yielded significant results. Our knowledge of the nature of equilibrium of exchange is much more precise now than it was even thirty years ago. We now know better what elements constitute the theory of demand; one may refer to the separation of the income effect from the substitution effect of price variation, which is not merely a contribution of utmost importance to economic theory, but is also a valuable aid to econometric studies. The conditions of stability of inter-related markets are now capable of being more precisely shown; and we have a better analysis of the working of forces needed to bring back the equilibrium of an economic system once it is disturbed,—the system consisting not only of commodities and factors but also of securities. The technique of deriving welfare propositions is also more scientific today, and we know better their significance as well as limitations for economic policy. It is said that the more advanced a theory is, the less is the use of 'data' and more the use of 'inference' that it involves. Judged by this test, the advance in economic theory that marginalism has led to is considerable.

True,—but all this advance is within the framework of an economy with given 'tastes and obstacles'. Once we get into the dynamic

[5] Cf. Jevons' vitriolic remark: "...that able but wrong headed man, David Ricardo, shunted the car of economic science on to a wrong line..." *ibid.* p.li.

[6] Is it because of this latter affiliation that they are often described as 'neo-classical'?

field—where 'tastes and obstacles' are themselves a function of the rate of exchange, the analysis goes awry.

Let us see what it all means. Let us take the simple case of exchange between two persons in respect of two goods—the barter case of Alfred Marshall.[7] We know that in this case the rate of exchange ('terms of trade', as some of you might prefer to call it) would lie between the limits set by the zero-indifference curves of the trading parties or, in case the goods are 'produced', by their comparative costs. Now, if these outer limits are given,—if, that is to say, the 'tastes and obstacles' are constant, you can chalk out a path from any point on the so-called contract curve which would lead the trading parties to a determinate rate of exchange, on the simple assumption that successive transactions enable the parties gradually to acquire knowledge of their respective preference systems.[8] However, suppose that the tastes and obstacles are themselves a function of the rate of exchange; the outer limits may then recede in a direction unfavourable to the weaker party, and *this recession may proceed cumulatively until the limit of tolerance is reached.*

Now, all this has awkward consequences for equilibrium theory. For, the simple case just considered typifies the entire universe with which equilibrium theory is concerned. Indeterminateness prevades the whole field of exchange—between persons, between groups, between sectors and between nations. "The whole creation groans" exclaims Edgeworth, as he perceives this ubiquity of indeterminatenesss, and he seeks relief in arbitration.[9] Static analysis glosses over the awkward edges of economic theory by invoking such devices as the law of indifference, crying of prices, recontract etc. And in terms of these devices a *possible* equilibrium is constructed. But paradoxically the construction that is drawn turns out to be not so much an aid to the interpretation of reality as a model for short term planning of resource allocation. The dynamics of exchange—which is what reality is—reveals, on the other hand, disharmony, if not conflict. In a situation where the so-called data of static theory are themselves determinates of the system, the weaker party (be it a 'class', a 'sector' or a 'nation') is likely to find its position cumulatively deteriorating in the process of exchange.[10]

[7] Marshall, *Principles of Economics*, 7th Edition, Appendix F.

[8] See my 'A Note on the Determinateness of Equilibrium', *Economic Journal*, September 1954, p. 616; also 'The Use of Curves in the Analysis of Market Price', *Indian Economic Journal*, July 1954, pp. 5-7.

[9] "Throughout the whole region of in a wide sense *contract*, in the general absence of a mechanism like perfect competition, the same essential indeterminateness prevails...The whole creation groans and yearns, desiderating a principle of arbitration, an end of strife." Edgeworth, *Mathematical Psychics* (London School Reprint), p. 51.

[10] For an application of the dynamics of exchange to the labour market, see Marshall, *ibid.*, Book VI, Chap. IV, Sec 6.

So we are brought back to just where we left off Karl Marx. A certain disharmony is inherent in exchange relations as they operate through the market. One does not need to be a believer in historical determinism to accept this. Whether, however, the disharmony is inevitably resolved by 'war', as Marx would have it, or it lends itself to treatment by 'countervailing power', 'arbitration' or 'pact' is another matter. For that depends, one might say, upon the degree of sanity and resourcefulness that the world concerned is endowed with at a given stage of its civilization.

III

While our economists were developing a 'method of analysis' by reference back to the choice of individuals to exhibit the properties of Economy and Waste, the 'subject matter' of Economics—Wealth and Poverty—slipped into the background.[11] Now it is this latter—the production and distribution of wealth and the social relations that they engender that was the preoccupation of the classical economists from Adam Smith down to, shall I say, Karl Marx. For, with all the mysticisms and terminological vagaries that shroud the analytic content of *Das Kapital*, was not Marx, the economic theorist, a disciple of Smith and Ricardo? The canvas that Marx uses is undoubtedly of a bigger dimension,—for he takes Institutions, too, as a determinate of the system and not just a datum, as Smith or Ricardo did. But in respect of the type of *economic* questions that he asks and in respect of the mode that he adopts in answering them he was indeed very much of a 'classical'.

It took long for us to recognise this. Even twenty-five years ago in the orthodox circle Marx would be mentioned only to be criticised. Now, while particular aspects of Marxian economics could be made an easy target by a clever marksman, the core of his theory which relates to economic development and crisis still stands and is reflected in what one might call Modern Economics. The cycle is complete, and we are now again asking very much the same type of questions as concerned Marx and we seem to be seeking answers very much in the same way as he did.

Thanks to the awareness concerning the state of stagnation of capital-saturated 'advanced' economies on the one hand and of capital-hungry 'stunted' economies on the other, Growth has again assumed the central position in economic theory. The former is a follow-up of the Keynesian theory of under-employment equilibrium and leads up to models of steady growth. The latter is a problem of

[11] For an exposition of the two aspects of Economics—'method' and 'subject-matter', see an illuminating paper by J. R. Hicks on 'Economic Theory and Social Sciences' published in a volume entitled *The Social Sciences: Their Relations in Theory and in Teaching* (Le Play House, London, 1936).

'primary accumulation' and leads up to models of accelerated growth. These are the problems on which Modern Economics is focussing attention. And they are essentially Marxian problems. The apparatus that is being used today for the analysis of the problems has also a family resemblance to the Marxian apparatus, couched as it might often be in a different language. You have the old emphasis on accumulation as the prime mover of the economic system and on surplus as the source of accumulation. You have also the division of the economy into 'sectors' and the typical Marxian way of setting out equilibrium conditions in terms of inter-sectoral balance—only you now have more sectors than Marx contemplated. Again, as in the Marxian system, consumption has come to be relegated to a subsidiary position and shown primarily as a function of the rate of accumulation. The concepts of 'unlimited supply of labour', 'disguised unemployment', 'saving potential' and so on that are today being so widely used in growth models in the context of under-developed economies are reminiscent of Marx's theory of primary accumulation.[12] Towards the close of the last century-within thirty years of the appearance of *Das Kapital*, Bohm-Bawerk, one of the leaders of the Marginalist School, wrote a book which he called *Karl Marx and the Close of His System*.[13] The centenary of Das Kapital is soon coming ; who knows ere it comes someone will not come with a companion volume —*Karl Marx and the Revival of His System*.

Indeed the pendulum has swung the other way, and we seldom hear now-a-days of market-forms and prices. In the broad perspective that we are taking, it appears as though Marginalism came as a sort of an interlude in the development of economic theory. And if the explanation of the advent of Marginalism that I was suggesting has at all any validity, one may well wonder what the course of economic theory would have been had Marx shed his Hegel and propaganda and remained the good classical economist that he really was.

Yet having got so far with the theory of relative prices, is it not tempting to see where it stands in relation to the theory of growth ? You cannot just throw the marginalist system overboard—for it does answer such questions as it raises more satisfactorily than does classical political economy. It does offer a more general theory of resource allocation, subsuming the classical labour theory as a special case. Witness, in contrast, the impasse that Marx creates by undertaking the

[12] Compare, e.g., the following passage : " Although the number of the tillers of the soil was decreased, the land produced as much fruit as before.....When, therefore, part of the rural population was set free from the land, the means of subsistence with which they had been nourished as landworkers were likewise set free. Such means of subsistence were transformed into the material elements of variable capital." Karl Marx, *Capital* (Everyman's Library), p. 826.

[13] The original German edition of the book was published in 1896 ; the English translation came out in 1898. The first volume of *Das Kapital* was published in 1867.

impossible task of integrating the theory of relative prices into the labour theory of value. Surely the marginalist theory of relative prices and resource allocation with its emphasis on scarcity and choice has made its place in the general corpus of economic science.

Where, then, is the junction between these two strands of economic theory—the theory of relative prices and the theory of growth? The two theories have so far taken shape independently—often indeed at cross purposes. There is, however, no obvious reason why it should have been so. The economic universe, both in its static aspect and in its dynamic aspect, is the resultant of the process of allocation of resources operating through relative prices. When gross investment is just equal to depreciation, the significant problem turns out to be the horizontal allocation of resources—the problem *par excellence* of static analysis. When however, gross investment exceeds depreciation, so that net investment is positive the vertical allocation of resources also assumes importance. And it is this vertical allocation operating through the rate of interest that determines the rate of growth.

This, however, is only the beginning of the problem of economic dynamics. For net investment leads to the formation of capital, and the form that the new capital takes on sets the pattern of future growth, and the process goes on *irreversibly*, with the distinction between data and determinates obliterated, as in the case of simple exchange set out earlier.

How do relative prices behave in this process of continuous growth, and in what way does the marginalist analysis of price fit in with the framework of long-run movement? What are the functions that relative prices perform in a continuously growing economy? How is growth in its turn, and technical progress that accompanies it, affected by a given system of relative prices? These are the sorts of questions that a dynamic theory will have to answer, and one is tempted to suggest that it is in the search for an answer to such suggestions —in the construction of a synthesis, that is, between the theory of value and the theory of growth that the future development of economic theory will lie.

The relation between relative prices and economic growth is a two-way relation. Within any given environmental setting, the system of relative prices no doubt determines the rate of growth through its effect upon accumulation and the technique of production. Yet growth also in its turn does react on the system of relative prices *via* the pattern of investment and distribution of income.

So long as an economy can depend on entrepreneurship to undertake investments adequate enough to secure a rate of growth such as would be warranted by the growth of population and labour supply,

one could leave the problem of growth alone and concentrate on relative prices. For it is these relative prices that are of immediate concern to individuals and groups. This is true of an economy which is in the 'adult' stage of its career and does not suffer either from capital saturation or from capital shortage. The major economic problem of such an economy is to be able to retain what it has already acquired by avoiding misdirection of resources and consequent waste. The age and environment of the Marginalists conform fairly closely to this description. In the Keynesian world of advanced economies, on the other hand, where accumulation is retarded by deficiency of effective demand, the problem of growth takes on a special significance, if only because a minimum of it is essential for the maintenance of a reasonable level of employment. Relative prices may in such an economy be left alone, to be determined by the required rate of growth. But for an economy whose progress has been historically stifled by the shortage of capital and entrepreneurship and which is marked by mass poverty, the problem is more complicated. While growth must be recognised here also as the governing force, relative prices cannot just be left alone to take their own course, nor can the allocation of resources be left to be regulated by the movement of relative prices, as the principle of economic liberalism would dictate. You cannot permit a natural development of the price system and the corresponding pattern of resource allocation *consistently* with the required rate of growth in such an economy; forced pace of growth that the economy needs must inevitably be accompanied by control and direction of the price system as also of the allocation of resources. This last brings us nearer home, and I am pretty sure that the conclusion is in line with contemporary mood.

IV

Indian economists, particularly of the older generation, have been somewhat allergic to theory. It is about half a century that Economics has been functioning as a separate subject in our universities—the Economics Department of the University of Calcutta had its Golden Jubilee the other day, and the other older universities may perhaps follow suit soon. Economic Theory has also been a compulsory subject in the post-graduate course in all the universities in the country. And yet till recently very little research work has been done in this field. Interesting factual and historical studies have no doubt been there, not unoften with a little mixture of politics and policy formulations. But economic theory as such, which is supposed to give direction to factual studies and to form the basis of policy prescriptions, has remained altogether a neglected branch of study in the country. Isolated cases can no doubt be cited of individual workers attempting to fill in small gaps here or there in the structure of economic theory. But substantial contribution to the advancement of the science—which is what theoretical research should aim at—there has been hardly any.

This is surprising. The Indian mind is traditionally speculative and is supposed to lend itself more to abstraction than to crude reality. Are not our ancestors builders of philosophical systems which provide sustenance to thinking minds even today? And have not our scholars made notable contributions to other sciences even in the modern age? Considering the general intellectual tradition of the country one would surely expect Theory rather than Organisation to have been more congenial to the Indian economist. And yet this is just what has not happened. If one looks at the history of economic studies in India, one is impressed by a certain lack of direction and system in them; useful as they are in their own way as 'description' of the Indian economy, there is little attempt in them at generalisation. It is remarkable how indifferent we have been to economic theory all these years.

Why this? It would be wrong to say that there was no provocation. Stagnation itself ought to have been enough provocation to the economic theorist. The properties of the so-called subsistence economy, trade nexus between the agricultural sector and the urban sector, the character of primitive accumulation—all these provided substantial piles on which to build a structure of economic theory. Ingredients of such a theory had indeed been already there in Smith and Marx. Yet little attempt was made to put them together and to evolve a theory in adaptation to our economy. Nor was any creative interest shown in the contemporary marginalist theory. We shunned the so-called 'western economics', but the endeavour to replace it was lacking.

Lamenting the failure in America, despite Carey's brilliant intuition, to produce a theory of economic progress alternative to classical political economy, Schumpeter has said: "Well, opportunity is only a necessary and not a sufficient condition for a great performance. It does not itself produce the man capable of using it. And the brains that could have done the job were producing boots."[13] Now the charge that our brains also were producing boots would surely be gratuitous. Yet the fact remains that Economics did not attract the man capable of building a theoretical system. The pioneers of Indian economic thinking, great as they were in many respects, were not economic theorists. In their impatience with the liberal tenets of classical political economy which were obviously at variance with the requirements of our economy, they repudiated even the tools of analysis that it provided. This was damaging to the progress of economic theory in the country. For even when economics came to be adopted as a subject for academic study, the influence of the early pioneers persisted, and there grew a distrust concerning Theory as such. The fact that contemporary economic thought was dominated by the marginalist theory

[13] Schumpeter, *History of Economic Analysis*, (Allen & Unwin, London, 1954), p. 818

of value which was far too remote from the needs of our economy added to this distrust.

These old inhibitions are disappearing. The post-war development of economic theory is too close to our problems not to have evoked response from our economists. And some of them, mostly of the post-war generation, have made notable contributions to it in recent years.

Economics is not one of those branches of study which can have any complaint these days on the ground of public apathy. Rather the contrary. Here as elsewhere the public are perhaps placing more weight upon our science than it ever was designed to bear. Economics is no longer treated as just an instrument of interpretation, as previously it used to be; it is today treated also as an instrument of operation. And large sums of money are being spent on research in this field. In our own country, apart from the normal expenditure on economic studies in universities, a sum of about twenty million rupees has been specially devoted to economic and social research during the last seven years, Ford Foundation alone having contributed about ten million rupees for the purpose. The return that we are getting in the form of empirical studies is also not inconsiderable. If this process continues for some time, we may reach a stage when our economists will cease to have any complaint regarding data.

While, however, empirical research is being given the encouragement that it rightly deserves, not enough is being done for theoretical research. It will perhaps be argued that creative theoretical work depends on individual initiative and is better done at the universities as part of their normal activity,—that it is empirical research that needs organisation and team work and has to be undertaken by special agencies. There is force in the argument. And if our universities were properly staffed, perhaps one could leave things there. As it is, however, one would ask for more. Taste for theoretical work in the field of economics, as in other fields, too, is a mater of individual temperament. Even today not many among the economists of our country are interested in the technique of analysis, and not all of those who are available in the country. Could we not get some finance for a centre which might attract these men and where they could pursue a systematic and sustained study of analytical economics, untrammelled by pressures arising out of immediate problems? I think that it should be possible and that we need it.

Science is not to be parochial either in respect of space or in respect of time. If economic science has often tended to be so, it is because the objective situations which have given stimulus to economic thinking have been found to differ from time to time and from place to place. Yet while the scientist's curiosity is stirred by his im-

mediate surroundings, his vision must not be restricted to these alone, for underneath the phenomena of his immediate experience may lie forces that are persistent and general. For *ad hoc* solutions of immediate and localised problems perhaps intuition and commonsense may serve you well enough. But for an understanding of the intricate inter-relationship of forces in the economic, as in the physical universe you need the illumination of science. And what is science but a body of generalisations which we call Theory ?

Chandigarh A. K. DASGUPTA

AN EMPIRICAL STUDY OF INDIAN GOLD PRICES

In this study, gold prices have been related to cereal prices and the general price level on a monthly basis for the period 1952-1959. The results support the common-sense notion that gold is valued as an inflation hedge and that its price will move with the general price level. A more tentative conclusion is that gold prices are related to speculation in cereals. In Section I of this paper, the theoretical basis of the inquiry is presented ; in Section II, the data and the statistical techniques are described ; and, in Section III, the empirical results are presented and interpreted.

I

Gold is an important asset in India, widely held both in large and in small amounts. Some of the reasons that gold is popular are : 1) gold does not necessarily fluctuate in purchasing power as other monetary assets do ; 2) gold is highly divisible at relatively little cost which is not true of other real assets such as land and common stocks ; 3) gold is more durable and more easily storable than other finely divisible real assets, such as commodities ; and, 4) gold, though earning no return, is more liquid than other real assets, such as common stocks, which do earn a return.

The demand for gold will be influenced by the level of income of the community as it will be an important form in which savings are held. Demand for gold will also depend on the average wealth of a community. Since gold does not earn a return, other real assets will become more desirable the less pressing is the need for liquidity and finely divisible units. Also, the return from, and the growing use of, fixed claim assets, especially fixed and savings accounts, will influence the demand for gold. These long-run factors have not been considered in the empirical part of this paper because they are qualitative in nature or because they cannot be quantified on a monthly basis.

The variables that have been considered in relation to gold prices are the consumers price index and the index of wholesale cereal prices. The expected relation between gold prices and the consumers price index is positive. Ceteris paribus, it would be expected that a one per cent rise in general prices would be accompanied by a one percent rise in gold prices. Since gold is generalised purchasing power, its price should rise with general prices. If other factors change, such as the level of real income, the supply of gold or the attitude of the community towards gold, then over time the relations between general prices and the price of gold will not be one to one. The period considered, 1952-59, however, is fairly short and the effects of changes in income,

wealth, tastes and the use of fixed accounts will not have had a great effect on the demand for gold. This is especially true since the predominant effects, the growth in the use of savings accounts which tends to reduce the demand for gold and the growth in income which tends to increase the demand for gold, should offset each other to some extent. Thus on balance a strong positive relation would be expected between the consumers price index and gold prices.

The relation between cereal prices and gold prices is not so clear. Since farmers are important purchasers of gold, if high cereal prices reflect themselves in an increase in income of cultivators, then one would expect gold prices to rise with cereal prices. However, there are several reasons why cereal prices may not be related positively to gold prices. First, in the case where high cereal prices mean higher incomes of farmers, they also mean lower real incomes of consumers and consumers may be forced to sell gold to purchase their usual amount of foodgrains. Thus these two effects may offset each other. Second, higher cereal prices do not necessarily mean that higher farm incomes will result because demand may be elastic for food grains for changes in price and because farmers may not be the persons realizing the high prices of grain. The latter situation is likely to arise if farmers are not able to store food grains and must sell most of their surplus at harvest. In a year of poor crops, farmers may have sold their foodgrains prior to the rise in prices which means middlemen will have profited from the rise in cereal prices. If speculators anticipate a crop failure by purchasing large quantities of grain at harvest to sell when prices rise and speculators sell gold to make these purchases, then gold prices will fall as cereal prices rise.[1]

On balance it is not clear whether cereal prices will be positively related to gold prices due to farmer's income rising, or negatively related due to speculative activity and/or a reduced real income to consumers. For either of these effects to be strong, it will be necessary for the persons involved, whether it be consumers, farmers, or speculators, to have a large impact on the gold market. While it is felt that the relation between gold prices and cereal prices will tend to be negative, it may be best to avoid further "speculation" and let the data speak for themselves.

II

The data used in the empirical work are spot prices of gold in Bombay, the wholesale cereal price index, and the cost of living

[1] This argument assumes that speculators in food grains hold gold as an asset when they are not holding food grains. It is true that speculators need not use their own capital if they can borrow funds as needed for purchases of food grains. But if, as seems likely, speculators must use some of their own capital, it is probable that they will hold it in gold. Gold has the advantage of being more liquid than other real assets, and than monetary assets bearing a return, and of being an inflationhedge which fixed claim assets yielding a return are not.

index. The years covered are 1952-59 inclusive, a total of 96 monthly observations. The model used to examine gold prices is :

(1) $y = a_{ij} + b_1 x_1 + b_2 x_2 + u$, where

y represents monthly gold prices,

x_1 represents monthly wholesale cereal prices, the 1952-55 observations being on a base of 1952-55 average = 100.

x_2 represents monthly cost of living index.

u is the error or residual term of the regression equation. The "u's" are assumed to be independent and normally distributed, and due to random shocks or influences not considered in (1).

i = 1, 2. . . . , 12, denotes the twelve months of the year.

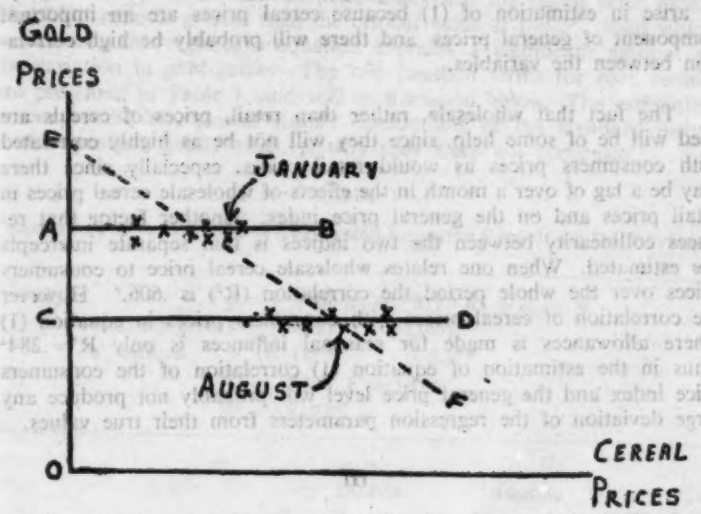
j = 1, 2, refers either to the period, 1952-55 or the period 1956-59.

Equation (1) postulates a linear relation between gold prices, and cereal prices and the consumers prices index. Two comments on the equation are in order. The intercept or constant term, "*a*" is subscripted "ij" meaning that (1) specifies a separate constant term for each "i" and "j", where "i" refers to months, and "j" refers to the period 1952-55, or 1956-59.

The reason for estimating so many intercepts is that gold prices and other variables will probably exhibit some seasonal pattern. Thus in Figure I, hypothetical observations on cereal prices and gold prices are shown for the months of January and August. The observations for January are drawn so that there is no relation between gold prices and cereal prices, i.e., the hypothetical relation would be the horizontal line AB in Figure I. Similarly for August the hypothetical relation is the horizontal line CD. The only difference between the two sets of observations is that in August gold prices are lower, and cereal prices are higher than in January. This corresponds to the usual conditions in India : August is the slack season when people do not have incomes to buy gold and when cereal prices are seasonally high because it has been a long time since harvest. If one regression line were fitted to all the observations, a relation like the line EF in Figure I would result, indicating a negative relation between gold prices and cereal prices.

To avoid such misleading relations one can estimate a different constant term for January (OA) and August (OC), as equation (1) specifies for all the months. It should be made clear that the estimation of separate intercepts for each month eliminates relationships arising from interseasonal variations in the variables. However, the intra-seasonal variations in the variables remain, and it is this variation which this study attempts to explain. In fact it has been necessary to estimate two intercepts for each month, one for the period 1952-55, and one for the period 1956-59. This was necessary because there was a change in the weighting system used in construction of the

Figure I



cereal price index in 1955. The average of the index prior to 1956 is about 400 and after 1956 it is about 100. This would present no problem if it were possible to link the two indices, but unfortunately there is no simple factor of proportionality between the old and new index. This problem is analogous to the situation in Figure I. If one imagines the January observations to be all the observations for 1956-59, and the August observations to be those for 1952-55, then a problem arises because the 1952-55 observations are much higher due to different base and weighting than the 1956-59 prices. The observations for the period 1952-55 have been put on a base of 1952-55 = 100, but this procedure still leaves the problem that the indices are not linked. A way to correct for this is to estimate two different intercepts for each period, as has been done in this study.

One drawback to the model of equation (1) is that it is assumed that the effect of changes in cereal prices on gold prices will be independent of the effect of general prices on gold prices. This is principally a problem in estimation of equation (1) either by least squares or other techniques. If there is high correlation[2] between two independent variables in a regression equation the estimate of the regression parameters (the *b*'s) may be considerably different than their true

[2] Correlation will be used in this paper to refer to the square of the correlation coefficient, R^2. R^2 is sometimes called the coefficient of determnation. R^2, corrected for degrees of freedom will be denoted $\bar{R}^2$.

values. This problem of collinearity of independent variables is apt to arise in estimation of (1) because cereal prices are an important component of general prices and there will probably be high correlation between the variables.

The fact that wholesale, rather than retail, prices of cereals are used will be of some help, since they will not be as highly correlated with consumers prices as would retail prices, especially since there may be a lag of over a month in the effects of wholesale cereal prices in retail prices and on the general price index. Another factor that reduces collinearity between the two indices is that separate intercepts are estimated. When one relates wholesale cereal price to consumers prices over the whole period the correlation (R^2) is .606.[3] However the correlation of cereal prices with consumers prices in equation (1) where allowances is made for seasonal influnces is only $R^2 = .284$[4] Thus in the estimation of equation (1) correlation of the consumers price index and the general price level will probably not produce any large deviation of the regression parameters from their true values.

III

In Table 1 the results of estimating regression equation (1) by the method of least squares are presented. Also presented are the standard errors and "t" values of the two slope coefficients. As indicated the slope coefficients are significantly different from zero at the 1% level and are of the expected sign. The correlation coefficient, corrected for degrees of freedom, indicates that 79% of the variance in gold prices

[3] This correlation allows for the linking of the cereal price index between 1952-55, and 1956-59 by the method outlined above. (If this were not done in simple correlation is naturally lower, namely $R^2 = .114$). Using the notation of equation (1), except that the subscript "i" refers not to months, but to all observations in the period, 1952-55, or 1956-59, the correlation above is:

$$R^2 = \frac{\sum_{i=1}^{48}\sum_{j=1}^{2}(x_{1ij} - \bar{x}_{1j})\ (x_{2ij} - \bar{x}_{2j})}{\sum_{i=1}^{48}\sum_{j=1}^{2}(x_{1ij} - \bar{x}_{1j})^2 \cdot \sum_{i=1}^{48}\sum_{j=1}^{2}(x_{2ij} - \bar{x}_{2j})^2}.$$

[4] Using the notation of the text, this correlation coefficient is:

$$R^2 = \frac{\sum_{k=1}^{4}\sum_{i=1}^{12}\sum_{j=1}^{2}(x_{1ijk} - \bar{x}_{1ij})\ (x_{2ijk} - \bar{x}_{2ij})}{\sum_{k=1}^{4}\sum_{i=1}^{12}\sum_{j=1}^{2}(x_{1ijk} - \bar{x}_{1ij})^2 \cdot \sum_{k=1}^{4}\sum_{i=1}^{12}\sum_{j=1}^{2}(x_{2ijk} - \bar{x}_{2ij})^2}, \text{ where}$$

the subscript "k" refers to the number of observations in each month in either the period 1952-55 or the period 1956-59.

is explained by the consumers price index and the cereal price index. The "F" ratio is greater than the critical value at the 1% level which means that the regression equation explains a significant amount of the variation in gold prices. The two constant terms for each month are presented in Table 1, and will be discussed below. The estimating procedure did not permit simple calculations of the standard errors of the constant terms, which is why they were not computed.[5]

TABLE 1

Estimates of Parameters of Regression Equation Explaining Gold Prices

(1) $y = 1{\cdot}5085\ x_1 - {\cdot}6129\ x_2 + a_{ij} + u,$

standard errors	(·092)	(·090)
"t" values	16·42**	6·83**

$\bar{R}^2 = {\cdot}789 \quad F = 15{\cdot}47$

$R^2 = {\cdot}847^{**}$

	a_{ij} = 1952-55	1956-59
January	2·37	4·54
February	5·14	5·72
March	2·43	6·03
April	1·96	5·76
May	1·42	5·89
June	—2·06	1·07
July	—2·01	— ·10
August	·12	·31
September	—· 65	— ·49
October	—4·62	— ·68
November	—3·70	—1·17
December	—4·21	— ·18

**Significantly different from zero at the 1% level.

The slope coefficient of 1.5035 on x_1 means that, given the month and given cereal prices, for every one point rise in general prices, the price of gold will rise by Rs. 1.50 per tola. The coefficient is significantly larger than 1.0 at the 1% level.[6] Also the elasticity of gold

[5] The computation technique used takes advantage of the fact that in the least squares method,

(2) $a_{ij} = \bar{y}_{ij} - b_1\bar{x}_{1ij} - b_2\bar{x}_{2ij}$.

Substituting this expression into (1) with the addition of subscripts:

(3) $(y_{ij} - \bar{y}_{ij}) = b_1(\bar{x}_{1ij} - \bar{x}_{1ij}) + b_2(x_{2ij} - \bar{x}_{2ij})$.

The "b's" were computed from (3) by least squares, and the intercepts from (2). This method of computing avoids inversion of a 26 × 26 matrix, which would be necessary if the dummy variables computing teachnique were used, but it does not provide a convenient method for estimating the standard errors of the intercepts.

[6] That is $\frac{1{\cdot}5035 - 1{\cdot}0000}{{\cdot}092} > 2{\cdot}58$, the critical value of "t" at the 1% level.

prices with respect to the consumers price index, computed at the mean values of the variables, is 1.60 which is considerably greater than 1.0.[7] This elasticity implies that a 1% rise in the consumers price index is associated with a 1.60% increase in the price of gold. The interpretation of these results is that, during the period 1952-59, the rise in incomes and slow growth in the supply of gold dominated influences such as growth in savings deposits which reduced the demand for gold. Gold prices rose by more than enough to keep the purchasing power of tola of gold constant. Or, in other words, the money necessary to purchase a tola of gold in 1959 would purchase more goods than the money necessary to buy a tola of gold in 1952.

The coefficient on cereal prices was negative with a value of $-.6129$ indicating that for every 1 point rise in the cereal price index, gold prices declined Rs. 0.6129 per tola . The coefficient was significantly different from zero at the 1% level. These results support the hypothesis that speculators in food grains, at time of poor crops, sell gold, thereby depressing its price, in order to purchase food grains whose prices rise. The elasticity of gold prices wtih respect to cereal prices was—.613.[8] It should again be emphasised that this coefficient indicates the relation between cereal prices and gold prices over time with the variation within seasons removed.

The intercepts show marked seasonal variation of the type one would expect for India. Thus from January through May the intercepts are highest, meaning that gold prices are generally higher in the busy season than in the slack season. This pattern of lower prices of gold in the slack season is not so sharp in the period 1952-55 as in the period 1956-59. The differences between the intercepts for 1952-56 and 1956-59, reflect, as has been pointed out, the differences between the cereal price index between the two periods.

Because to some extent the intercepts displayed a busy season-slack season pattern it was decided to estimate the simpler relation :

$$(4)\quad y = a'_{ij} + b'_1 x_1 + b'_2 x_2 + u, \quad \text{where}$$

x_1, x_2 and u are defined as in (1), and

$j = 1, 2$, referring either to the period 1952-55, or 1956-59.

$i = 1, 2$, referring either to the months, January through May, or June through December.

One disadvantage of equation (4) over equation (1) has already been mentioned, namely that the correlation between x_1 and x_2 is quite high in this case.

[7] The elasticity denoted as "u" here was computed in the usual way. That is $u = dy \cdot x_1/y.\ dx_1$ where "d" refers to a change. In the present calculations dy is the slope coefficient (1·5035), dx_1 is 1·0, and y and x are the mean values of these variables over the period. The mean values were Rs. 100·35 per tola of gold, and 107·04 for the consumers price index.

[8] This elasticity is based on the average of cereal prices over the whole period. As mentioned the 1952-55 average is 100·00 while the 1956-59 average was 100·79.

The estimates are :

$$(4)\ y = \left\{\begin{array}{l}\text{January to May, 1952-55...32·01}\\ \text{June to December 1952-55...27·95}\\ \text{January to May, 1956-59...44·04}\\ \text{June to December 1956-59...40·19}\end{array}\right\} + \cdot 7036\, x_1 - \cdot 1064\, x_2 + u$$

The standard error of the coefficient on consumers prices was .354 and the "t" value was 1.99, the coefficient being significantly different from zero at the 5% level.[9] Though the coefficient, .7036, is less than 1.0 it is not significantly different from unity.[10] The coefficient on cereal prices was—.1064, and the standard error of the coefficient is .1408. The coefficient is of the same sign as in equation (1) but it is not significantly different than zero. The correlation coefficient (R^2) for this regression equation was .829, and when corrected for degrees of freedom, $\bar{R}^2 = .818$. The four intercepts showed the expected pattern of being higher during the busy-season of either the period 1952-55 or 1956-59 and lower during the slack season. Though this regression equation explains approximately the same amount of variance of gold prices as equation (1), it would appear that equation (1) gives more reliable estimates of the slope coefficients on general prices and cereal prices. The coefficients from equation (1) are larger and statistically more significant than the coefficients of equation (4). This is probably because there is greater correlation between cereal prices and general prices ($R^2 = .666$) in equation (4), than in equation (1), ($R^2 = .284$). The higher degree of collinearity between cereal prices and consumers prices in equation (4) has probably tended to distort the estimates of the slope coefficients more than in equation (1).

The estimated value of gold prices from equations (1) and (4) and also the residuals (the "u" terms) have been calculated. Chart IIA shows actual gold prices and estimated gold prices from equation (1) plotted in time-series form. Chart IIB shows similar estimates for equation (4). It is evident in either Chart IIA or IIB that there is substantial auto-correlation of the residuals over time with periods of many months where the estimated gold prices are either always above or always below actual gold prices. This phenomenon frequently arises in empirical work time-series, and unfortunately it was not avoided in this study. From casual inspection however, it would appear that auto-correlation of residuals is less pronounced in Chart IIA than IIB. The relative superiority of equation (1) in this respect is probably due to the estimation of separate intercepts for each month.

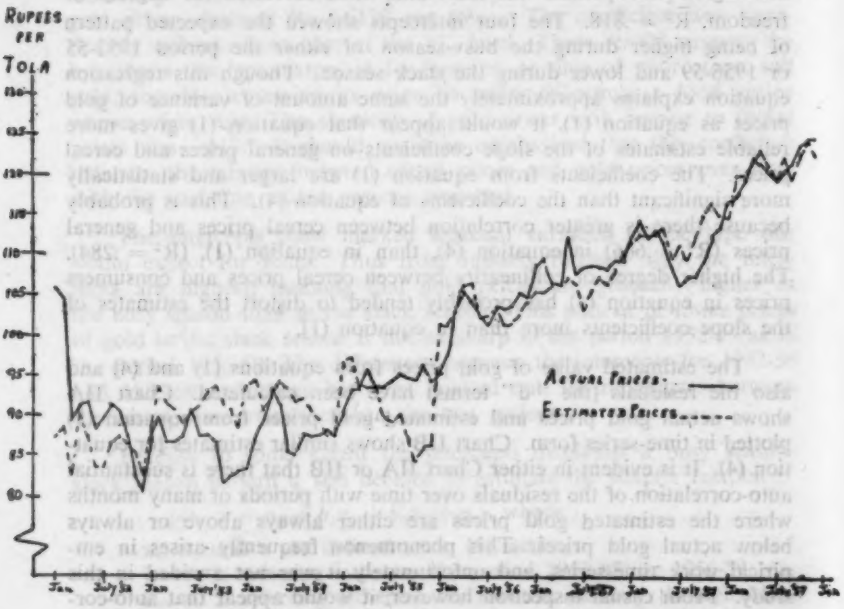
[9] The standard errors of the four intercepts were also calculated. The four intercepts were significantly different from zero at the 1% level. Their respective "t" values were, January to May, 1952-55 ("t" = 2·67), June to December, 1952-55 ("t" = 2·78), January to May, 1956-59 ("t" = 9·01), and June to December, 1956-59 ("t" = 5·84.).

[10] That is, the absolute value of $\frac{\cdot 7036 - 1 \cdot 0}{.354} < 1 \cdot 96$, the critical value of "t" at the 5% level.

It is also evident from the charts that estimated gold prices are further from actual prices in the period 1952-55 than in the later period. This difference is probably due to the fact that the cereal price index in the period 1952-55 displayed almost 4 times the variance that it did in the period 1956-59. During the latter part of the period 1956-59, equation (1) (Chart IIA), appears to provide a closer fit to the data than does equation (4). On the basis of the low reliability of the slope coefficients, the high correlation between cereal prices and consumers prices, and the somewhat poorer estimates of gold prices associated with equation (4), the conclusions of this study draw most heavily from the estimates of equation (1).

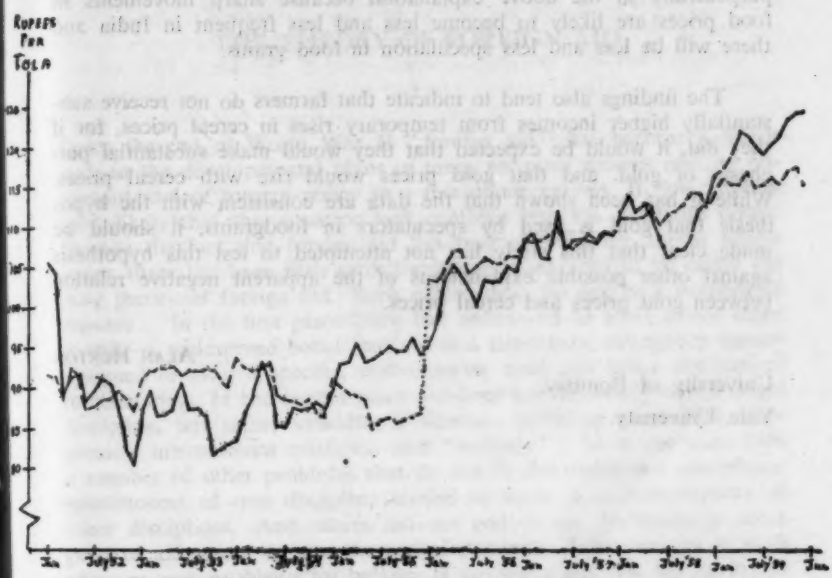
Chart II

A. Actual Bombay Spot Gold Prices, 1/52–12/59 and Gold Prices estimated from equation (1).



This study has found a marked seasonal variation in gold prices and the general conclusion is that gold prices are higher in the busy-season when incomes are seasonally higher. It was also found that gold prices bear a strong positive relation to consumers prices, as one would expect. In equation (1) it was found that a one point rise in the consumers price index was associated with a Rs. 1.50 rise in the price of gold per tola and the elasticity is much greater than 1.0. While it would be expected that gold prices would rise on a one for one basis with consumers prices, i.e., the elasticity of gold prices with respect

B. Actual Gold Prices and Estimated Gold Prices from equation (4).



to general price would be equal to unity, the fact that the elasticity in equation (1) was much greater than one requires some explanation. It has been argued here that the reason the price of gold has risen by more than enough to keep the purchasing power of a tola of gold constant is that the slow rise in the stock of gold and the increases in income during the period have more than offset the effect of increased use of savings accounts. Another explanation, which certainly can not be ruled out, is that a rise in consumers prices bring about the expectation of further rises. If such expectations are important, then gold prices may appear to have risen much more than warranted by present consumers prices, because present gold prices are consistent with what the community believes consumers prices will be at some future date.

In this study it was found that there was a significant negative relation between cereal prices and consumers prices. The explanation suggested here is that speculators in food grains anticipated (non-seasonal) rises in the prices of food grain due to, for example, crop failure. They used some of their own capital for speculation and held gold as an alternative asset when not holding food grains. When they anticipated a rise in the price of grains, they sold gold in significant amounts, depressing the price of gold, and purchased food grains which were soon sold when food grain prices rose. Thus, due to such speculation in food grains, one would expect to find a fall in gold

prices associated with a rise in cereal prices. The past tense was used purposefully in the above explanation because sharp movements in food prices are likely to become less and less frequent in India and there will be less and less speculation in food grains.

The findings also tend to indicate that farmers do not receive substantially higher incomes from temporary rises in cereal prices, for if they did, it would be expected that they would make substantial purchases of gold, and that gold prices would rise with cereal prices. While it has been shown that the data are consistent with the hypothesis that gold is used by speculators in foodgrains, it should be made clear that this study has not attempted to test this hypothesis against other possible explanations of the apparent negative relation between gold prices and cereal prices.

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THE THEORY OF FOREIGN AID

I

SINCE the end of World War II "foreign aid" has become a major item in the developmental plans of many recipient nations and, an important tool of foreign policy in a few donor nations. It now appears very likely that this situation will continue into the indefinite future. Despite the fact that foreign aid has been with us for almost fifteen years, there has been little attention given to what might be called the *pure* theory of foreign aid. Such neglect may be due to a number of reasons : In the first place there has been—and to some extent there is still—a widespread belief that aid is a temporary, emergency matter designed to meet a specific, non-recurring need and hence not subject to theorizing. In the second place aid does not fall neatly into a single discipline, but rather straddles a number, including particularly economics, international relations, and "military". As is the case with a number of other problems that do not fit the traditional disciplines, practitioners of one discipline tended to leave it to practitioners of other disciplines. And others did not pick it up. Furthermore some parts of aid create no new theoretical problems. Financial aid as such poses no new problems for balance of payments analysis, for an excess demand inflation model, or for a number of other traditional economic problems. So to some extent no new problems of interest to the economist were created by the advent of continuing aid. Aid was simply a special kind of international capital movement. However the permanancy of aid is now widely recognised, and as its impact is more fully examined it has beome abundantly clear that not only is aid not a simple matter but also that its existence creates a range of problems that must be effectively resolved if the full fruits from aid (for both recipient and donor) are to be realized. A book that deals specifically with the "theory" of foreign aid is therefore to be welcomed, and merits a great deal of attention. The purpose of this article is to examine some parts of Charles Wolf's book,[1] and to use it as a springboard to some further reflections on the problems he raises.

There are two main divisions to Mr. Wolf's book. The first, Chapters 1-6, is concerned with the United States aid program in Southern Asia (Afghanistan, Pakistan, India, Nepal, Ceylon, Burma, Thailand, Cambodia, Laos, Viet Nam, Indonesia, and the Phillippines). These chapters are primarily empirical and descriptive in that most attention is given to a compilation of the quantitative data on United States aid to these countries over the past ten or so years. Breakdown

[1] *Foreign Aid: Theory and Practice in Southern Asia*, Charles Wolf, Jr. Princeton University Press, Princeton, New Jersey, 1960.

by country and by program is given. Such a compilation is useful in itself, but it also suggests the chief theoretical problems that have to be resolved in one way or another in arriving at allocations among several countries and several projects within countries. There is also a discussion of the "back-ground" to aid to this area which points up some of the reasons why aid took the form it did and why the total amount of aid varied from year to year.

The other main division of the book, Chapters 7-11, considers in some detail the "analytical issues" which are implicit in any foreign aid program. This part is quite abstract, even mildly mathematical and undertakes in effect to build models that reveal some of the relationships that govern (or should govern) decisions with respect to foreign aid. The "analytical issue" considered is essentially this : Given the size of the aid pie for a particular region (Southern Asia), how can an "optimal" distribution of the aid among the countries in the region be achieved, and, secondly, how can the "optimum" distribution of aid among possible uses within a country be determined. The latter question is limited chiefly, but not exclusively, to the general choice between "economic" and "military" aid. Chapter 11 concerns some issues of theory and policy arising from Soviet aid. Chapter 12 is a rather detailed summary of the entire book.

The book is written from the point of view of the United States, i.e. the optima sought refer to optima for the United States. Also the historical and descriptive material applies to the United States. Chapter 11 discusses Soviet economic aid to Southern Asia, but chiefly from the point of view of its impact on United States programs. This point of view should be of interest to the citizens of other countries not only because the origins and complicated history of aid (to Southern Asia) are neatly told, and are revealing as to the thinking and arguments that underly United States decisions in this area in this period but for another reason as well. The question why does country X accept aid is a much simpler question than why the United States gives aid. For recipient countries to understand the motives behind the United States aid is surely an important ingredient of a successful long run program. The book impresses one as being very carefully written, and its author emphasizes repeatedly the limited and heuristic nature of his arguments. At one point (p. 5) he observes that his purpose "is not so much to find answers, but to examine and clarify the questions themselves". These questions are of pertinence to countries now receiving aid no less than to the United States.

My attention will be directed chiefly to the analytical issue defined above (and further limited to non-military aid), and only a few remarks will be made on the descriptive material.

II

An optimum allocation of non-military aid requires a specification of the objectives of aid; and the formulation of a single overriding goal in a non-tautological fashion is extremely difficult. In general, however, it seems correct to say that there is implied in the United States aid program an assumption as to a relationship between certain economic variables and political behavior. The hypothesis suggested by Mr. Wolf is that the chances of survival of political systems based on general consent rather than coercion depend to a significant degree on the extent to which such systems produce successful economies. "Successful" would mean that key economic variables met standards that the population deemed acceptable. Thus a major objective of United States foreign policy is political stability under conditions of genuine political freedom. It is assumed that this objective requires for its achievement a certain economic performance. Foreign aid it is further assumed contributes to the economy performing in a manner consistent with this higher political objective. Maximum returns to the United States from a given amount of aid would require that each country receive an amount such that "marginal value productivities of aid" were equal for all countries. "Marginal value productivity" would be the increment in economic performance relevant to the impact on political stability and freedom arising from aid weighted (valued) by factors measuring the country's importance to the United States.

But such a formulation is simply a beginning. The real problem is to give empirical content to the concept of productivity. Mr. Wolf's approach to this problem is of considerable interest. Vulnerability to extreme political action or ideas is assumed to be inconsistent with United States objectives. Such vulnerability (Pe) is then explained by three variables: economic aspirations (A), the level of living (E), and economic expectations (Ex). His central equation is then $Pe = \phi(A, E, Ex)$. He further assumes that the marginal contribution of A to Pe is positive (an increase in A, with E and Ex constant, increases Pe) and that of E and Ex negative. E and Ex combined represent current and expected actual economic standards, and A represents goals acceptable to the population. The form of the equation used in the empirical tests (applied to India) is $Pe = \phi KA\,(aE - Ex)^{-1}$ where K and a are weights.[2]

Since it is not possible to observe or count A, E, or Ex, surrogative indices are necessary if further empirical work is undertaken. This the author does in the following ways:

[2] Mr. Wolf presents a general discussion of alternative aid objectives (economic and humanitarian) that sheds considerable light on these matters.

Aspirations are assumed effectively indicated by three things; per capita outlays on education, literacy rate, and contact with persons outside the groups (the demonstration effect). This last item is measured by the difference between E for a given group and the average E for the larger group or area of which it is a part. Aspirations are assumed to be positively related to each component of the index.

The level of living (E) is indicated by *per capita* consumption, urban wage rates, percentage of labour force unemployed, and the ratio of land owners to total cultivators. The last item is included as a measure of "status". Level of living, it is assumed, depends on status in the society, as well as income. Evidently E is positively related to all its explanatory variables except percentage unemployed.

Expectations pose even more severe measurement problems. Mr. Wolf's approximation is in terms of recent changes in living standards and kinds of investment. Thus it is assumed that appraisals of the future E depend very much upon how E has behaved in the recent past, and also upon the kind of capital accumulation that is visible to the population, e.g. electric power, transportation facilities, agriculture and social services (health and education). Expectations are positively related to both variables.

Finally Mr. Wolf assumes that political vulnerability can be effectively indicated by the percentage of total voters who vote for communist candidates. Then he seeks to test his argument by reference to the results of India's 1951-52 election. Data were not adequate to enable him to apply his functions exactly as outlined above and it was necessary to make some modifications, but these do not alter the nature of his model. He takes a least squares regression of the number of communist votes as a percentage of total votes in each Indian State on the indicators of aspirations, level of living, and expectations. The significance of the results is tested with both the F distribution and the correlation coefficient. The hypothesis that the regression has no explanatory value is rejected at the 6 per cent and 10 per cent levels of significance depending on whether educational outlays are or are not included. The 90 per cent confidence interval for the population correlation coefficient is .5227—.9940 or .3004—.9899 without educational outlays included in the argument. It is concluded from these results that the model is at least worth further testing in other countries and with the 1957 Indian election results.

The model can be questioned in a variety of ways many of which Mr. Wolf calls attention to. Thus the data used are open to all sorts of problems which could well modify the results to a significant degree. Similarly the indices employed to measure aspirations, level of living, and expectations may be questioned on several grounds. For example

education may create not politically disturbing aspirations as such but rather a clearer picture of what is possible and what is not. Similarly "status" is a complicated concept which, in a society heavily dominated by tradition, can scarcely be approximated by land ownership. Or one can argue that expectations are formulated on the basis say of political announcements, radio and newspaper advertising, (and education) or other forms of public pronouncements rather than on changes in living standards or the pattern of investments. It might also be argued that of greater relevance than new rising expectations is the destruction of old traditional expectations. For example in areas where a major upsurge of population growth has occurred traditional land tenure practices have necessarily to be violated, and the expectations as to land distribution among off-spring must be changed. Similarly one could suggest equations of forms other than the simple linear relations used in most instances. This is to say simply that even if the Pe function is accepted, alternative indices for A, E, and Ex could be made which are as satisfactory *a priori* as the ones used in the book and which, I strongly suspect, would yield as satisfactory empirical regressions.

But of course the purpose of theory making is to isolate a few variables that appear to be strategic, and to trace out the implications that exist in relationships involving these variables. And Mr. Wolf is exceedingly regular in his warnings as to the very narrow scope within which he examines a very wide problem. However there is a very real danger in forcing a major policy question of immense scope into the confines of a simple model of a few equations. For in so doing there is the possibility, indeed the likelihood, that relevant considerations outside the model will be *assumed* to have no special importance simply because they are outside the model. This is especially likely to be the case when the model itself is not examined and defended in as careful and exhaustive a fashion as possible. To illustrate this two points in Mr. Wolf's argument may be noted.

On page 358 he writes "For such problems (i.e. "big" problems), analytical methods must be used heuristically, rather than operationally. Yet we should not depreciate this heuristic role in the process of arriving at decisions. In the Mutual Security context, for instance, United States decisions such as furnishing military aid to Pakistan, forming SEATO, or responding to Soviet aid offers outside the communist bloc, might well have been different decisions if a more extensive use of analytical methods had been possible." If the last quoted sentence is more than a tautology, (i.e. if it is more than saying that if other methods had been employed other decisions may have been reached) it means Mr. Wolf believes that merely by applying the kind of model he has developed, better (not simply different) decisions would have been reached in these instances. I do not believe this. For, as Mr. Wolf asserts frequently, decisions on

allocations of aid must consider a number of variables outside any model of the type with which he works. There is thus no reason why the use of a model of the type he has developed would produce better decisions than those based on experience, responsible judgment, and good sense.

The point is made even clearer on pages 314-315 where the somewhat odd role of education in the argument is noted. Education is assumed to raise aspirations, and the raising of aspirations, ceteris paribus, is assumed to raise political vulnerability (Pe). Since raising Pe is undesirable, then the conclusion emerges that education is to be minimized. Mr. Wolf then observes in effect that despite the logic of this result it is probably wrong. It is noted that increased education is essential for technological progress, for a more effective labor supply, and indeed as an end itself. To argue that considerations not explicitly included in the model may counteract the aspirations effect of education defined in the model or that the long run advantages will outweigh the short run risks is to say that the model is inapplicable. To point out—as does Mr. Wolf on page 315—that the process being examined is exteremely complex and to apply policy recommendations emerging from the model dangerous is, of course, correct. It does not, however, relieve the model builder of the necessity to diagnose that complexity.

This is not to say that every effort should not be made to extend the area of problems that can be solved by analytical methods. But it is to argue that the form the model takes is of a great importance. I believe that real questions may be raised about the use of Mr. Wolf's basic equation, $Pe = \phi(A, E, Ex)$, as a guide to the solution of the allocation problem. To discuss this in more detail it is helpful to summarize his allocation model.

III

It is assumed that the United State has an amount of aid, G. to allocate to n countries. How should it be done ? A production function of the type—

$$O_i = a_i G_i^{\alpha} \qquad (i = 1, 2, \ldots\ldots n)$$
$$(1 > \alpha > 0)$$

is assumed. O_i is the addition to country i's national output that is induced by aid and G_i is the amount of aid provided the i th country. The parameter α is assumed to be the same for all countries while a_i of course varies from country to country. The latter parameter is assumed to depend upon the capital-output ratio and the marginal propensity to save in the i th country. This equation represents the "physical" productivity of aid to the i th country, but to take into account the important fact that the Unied States is interested in maximizing the

"total" return (not merely the physical return) from its aid this physical productivity must be "valued". The value measures used are Pe, population, and a scale factor, S, to be defined in various ways depending on the problem. Then the "value" product" of aid is written

$$R_i = (a_i G_i^{\alpha}) \; Pe_i P_i^{-1} \quad S_i \; (i = 1, 2, \ldots\ldots n)$$

where R_i is the returns to the United States from its aid to country i. Assume diminishing marginal returns, then the maximum value of R is of course reached by equalising marginal returns in all n countries. It can be seen intuitively that if the scale parameter is measured in terms of population, S and P cancel. Then if it is further assumed that α is small, the "optimal allocation of economic aid in the region requires country allocations proportional to the product of the vulnerability parameter, Pe_i, and the productivity parameter, a_i" (p. 369). This is an extremely interesting and important result. Here also Mr. Wolf is careful to note limitations. For example, the assumed form of the production function may prove inapplicable; e.g. if there are increasing returns to aid (if $\alpha > 1$) then one country perhaps should receive all the aid. In this connection much depends upon the size of the aid pie (G) to be allocated.

But a more general point to note is that the aid production function is in terms of the impact on output, and therefore the productivity of investment is measured by the growth of output. But this impact as reflected in a_i and α depends upon a variety of factors, e.g. labor supply, technology, organisational capacity, etc. It may well be that aid is extremely "productive" not so much in its immediate impact on output, but in its impact on the country's capacity to use aid effectively. This is to suggest that "absorptive" capacity must itself be created, and its creation may be extremely difficult and demanding of resources. It may also be the case that nutrition standards are so very low that increased consumption by raising labor's efficiency would be the most effective way to raise output. In this case the effect of aid on changes in capital-output ratios through changes in the quality of labor inputs would be the relevant "functions" to identify. There are evidently substantial measurement problems involved in both these approaches and to write an aid production function reflecting such arguments would be equally difficult, but these facts do not destroy their relevance. It should be recognized that the function used by Mr. Wolf reflects a particular point of view as to what constitutes an effective indicator of the physical productivity of aid.

There are two more general questions about this aid allocation model that seem important. One has to do with the implications of the model for the development process, and the other has to do with the incentives for the recipient country created by such an allocation method.

We still know distressingly little about the mechanics of economic development. It is, however, becoming increasingly clear that the now widespread determination to create a rising standard of living has originated in the creation of aspirations among large segments of the population. This consumption oriented origin of the desire for development is frequently contrasted with that generated by the entrepreneur's search for profits. In an economy where economic (and other) activity is more adequately explained in terms of traditions and established routines than by the search for profits, then not only is the supply of entrepreneurial talent likely to be extremely limited, but the obstacles to change are sure to be great indeed. In this kind of an environment perhaps the most effective way to induce change is by creating national aspirations for a much more productive economic system. Thus "aspirations" become a strategic part of the development process especially in its earliest stages when aid is likely to be crucial. Indeed one can imagine a situation in which it may be that an objective of United States aid would be to generate aspirations that would in Mr. Wolf's model raise Pe. If aspirations are an opportunity for and a means to achieving development, they are no more likely to lead extremism than to moderation *unless* the population is convinced that extremism will produce growth and moderation will not. Therefore the essential ingredient of an effective foreign aid program is an understanding of the mechanics of development.

It is hardly legitimate to read into Mr. Wolf's argument a particular attitude or approach to development other than that implied in his aid production function. But it is surely implicit in his models that originating and sustaining a development program in Southern Asia requires little in the way of institutional change or that such change if necessary can be achieved in way that create no questions about his Pe function. It seems to me that Mr. Wolf's defense of his model suffers from the absence of a clearer statement of his position as to how development occurs and especially how it is initiated. If one accepted the argument that "too high" aspirations contributed to a political vulnerability antithical to the interests of the United States and also that aspirations were a major originating force in development, then a model involving hypotheses as to both relationships involved might be written. From this would emerge an "optimum level" of aspirations which, in connection with other included variables—expectations, standard of living etc.—would indicate the point where their "undesirable" effect was outweighed by their "desirable" effect. But I doubt this approach would be very rewarding given our current understanding of the relationships involved.

The second question referred to above may be illustrated by assuming that Mr. Wolf's model was applied directly as the method by which aid is distributed in Southern Asia. (It should be clear that Mr. Wolf in no sense recommends this). A clever government would

then seek to create conditions that would warrant its share of the region's aid pie being increased, i.e. it would increase political vulnerability to the maximum extent consistent with its continued existence. This means that the aid allocation method would encourage the recipient countries to do just that which the donour country was seeking to prevent. The general problem is obvious : if aid is one way of achieving some of the objective of a donor country's foreign policy, criteria of allocation should be such that no incentive is given to produce an undesirable (from the point of view of the donor) situation merely to get more aid. But then neither should aid be bribery.

This exceedingly complex problem can be most effectively approached by devising a criteria that results in aid facilitating the achievement of an objectives acceptable to both donor and recipient, rather than one that results in aid allocated on the basis of seeking to overcome some undesirable (to the donor) situation. In general terms in most cases this is " economic development " in the context of the chosen political (chosen by the people) arrangements. And we are again thrown back on our inadequate understanding of the development process.

A general conclusion as to aid allocation is thus suggested. Such allocation must rest on a firm understanding of the mechanics of development. The working out of the latter must preceed the design of the former. Since aid must continue and must be allocated, and since we do not now possess that firm understanding, it would appear that heavy reliance must be placed on the kind of non-analytical wisdom that, as Mr. Wolf notes, is always in short supply.

IV

An allocation model for military aid is also worked out by Mr. Wolf, but I will not consider it here. However it does seems useful to remark on his discussion of the problem of choosing between military and economic aid.[3] Mr. Wolf argues that essentially returns from the two forms of aid are incommensurable. Their objectives merge at so high a level of generality that quantitative comparisons are meaningless.

It is not clear to me exactly what such a statement means. In both the military (not discussed in this paper) and economic aid allocation models the returns to the United States are in the same units,

[3] Mr. Wolf emphasizes the role of substitution in foreign aid and the danger in using the commodity content of aid as a guide to intended or actual use of aid. The discussion of this point (including an appendix) is especially helpful in view of the tendency to classify aid into various categories and the plethora of kinds of aid that the United States has granted. It is also especially relevant where donor and recipient countries do not have the same specific goals.

"accounting" or "imputed" dollars. Presumably these dollars do not measure the same thing when applied to economic aid as applied to military aid. There is no logical reason why this could not be the case although it is not clear from the measures themselves why they are not comparable. But more importantly than this is the apparent fact that decisions are made that result in a breakdown of aid between that intended for military purposes and that intended for non-military purposes. When this decision is made a comparison is effected or otherwise no decision would be possible (except by putting numbers in a hat). Much of the Congressional testimony is concerned with just this point, and so too is much investigation in countries where military problems are as serious as economic problems. Furthermore the discussion of aid to mainland China in the early part of the book (pages 38-46) indicates just such a comparison. For here it is pointed out that military aid to China after some given level had been reached was yielding no returns, while considerable return was to be expected if civilian consumption standards in urban areas were raised. This "lesson" from the China experience is in effect a comparison of the effectiveness of military vs. economic aid.

Evidently the conclusion about China emerged from an analysis of the kind of forces at work in China that seemed to allow the Communists to assume control. I suggest that comparable analysis elsewhere, if possible to effect, would also result in conclusions about the relative effectiveness of military vs. economic aid as a means of achieving United States objectives. And once more we come back to the emphasis upon understanding the process of economic and social change in the newly developing countries. For it is in such understanding that the commensurability of returns is to be found.

The chapter on Soviet aid is a more or less self contained unit. Mr. Wolf suggests that United States interests are not so uncategorically negated by Soviet aid as is sometimes thought to be the case. He makes the wholly acceptable point that United States aid through the United Nations if tied to comparable Soviet aid might on balance aid the free world. Similarly his insistence on flexibility of United States policy in response to Soviet aid overtures in Southern Asia is useful.

V

The descriptive material on the aid program in Southern Asia since 1945 provides a useful summary of the beginning of large scale United States aid in Europe as well as a great deal of statistical and qualitative material on size and composition of aid to Southern Asia. The change in the purpose of aid from emergency relief and recovery to development and military strength is not only an important historical point, but it is also the source of most of the near intractable theoretical problems that have arisen as to an effective aid program.

To interpret the aid data Mr. Wolf assumes that the allocations in each year were optimal, and then asks what further assumptions about the productivity of aid are required to support the optimality assumption. (He emphasizes that he is not necessarily describing the arguments that actually lead to the allocations). The general argument is in terms of "value" productivity of the aid. Most of his analysis is in terms of changed assumptions about the physical productivity of aid or the changed values (or weight) attached to the country by the United States. At this point, no unambiguous definition of either productivity or the weights has been given, and at times I think Mr. Wolf's approach is little more than formalizing a tautology. Without an exact notion as to the meaning of productivity, it is difficult to appreciate assumptions that the marginal physical productivity of aid declines or that the marginal physical product of aid is the same in each one of a given group of countries. Given an assumption about the physical productivity of aid, weights or values attached to this productivity are in effect residually determined. For example, if it is assumed that the marginal physical productivity of aid curve is about the same in all countries receiving aid, then differing amounts of aid to the various countries can only be explained by differing weights. I would contend then that before interpreting the allocations in these terms, definition of "aid productivity" is essential. As I have already argued, aid can be productive in a variety of ways.

It is perhaps unfair to labor this point. These chapters contain a great deal of material which gives meaning and understanding to aid allocations in these years. Even more importantly, the discussions point up very clearly the great complexity of carrying out an aid program and also, I would emphasize, the great need for such a program to be grounded on a revealing theory of social and economic change.

VI

This is an important book for anyone concerned with an international aid program either as donor or as recipient. The author is indeed successful in his announced objective of examining and clarifying questions rather than providing answers. The big issue which emerges is the strategic role of an understanding of growth. Our knowledge of the process of both economic development and cultural change can, only with great optimism, be rated modest. The theme of this article has been simply that a "theory" of foreign aid presupposes a "theory" of economic and social change and until the latter is developed the formation of the former is likely to be severely handicapped. The great merit of Mr. Wolf's contribution is the emphasis on a systematic and deliberate thinking through of as wide a range of issues as possible, as well as the provocative and seminal content of his substantive arguments.

Bombay HENRY J. BRUTON

IMPACT OF REGIONAL VARIATIONS IN FOODGRAINS' PRODUCTION IN RELATION TO ITS REGIONAL DEMAND ON PRICE LEVEL

SINCE the beginning of the planning era, the country has experienced sharp fluctuations in prices of foodgrains. During this period two opposite price movements are worth noting. These are : (1) sharp decline during 1953-54, and 1954-55 and (2) an equally sharp rise during subsequent years. Much has been said to explain these variations and certain short term remedies have been applied from time to time to restrict these variations. Hitherto the attempt to explain price behavior has followed the pattern set by "Foodgrains Inquiry Committee", which was appointed in may, 1957 under the chairmanship of Shri Ashoka Mehta. This Committee, in its Report, has tried to explain price movements in terms of "(a) General factors and (b) Specific factors". According to this Committee, "under general factors may be Considered the broad forces—monetary and non-monetary —operating on price level as a whole including prices of food as well as non-food articles. The specific factors would relate to foodgrains or cereals in particular and may be further classified as (i) factors on the demand side, and (ii) factors on the supply side".

Consistent with this approach, it explains price-break of 1953-55 thus : "The programme of investment under the First Plan had yet to gather momentum. Deficit financing and bank credit had hardly started to expand significantly. Meanwhile, a sharp increase in production of foodgrains accompanied by the cessation of Government procurement with consequent temporary abeyance of demand until trade could fully resume its normal role led to the break in prices". Again the subsequent price rise since the middle of 1955 is explained as "an outcome of monetary and other general factors inter-acting on certain specific factors pertaining to the demand and supply of foodgrains. The general factors created an atmosphere conductive to an uptrend in the price level. The factors on the demand side primarily reflected similar influepces in so far as foodgrains were concerned. With a situation thus generally favourable to a rise in the prices of foodgrains it was first the shortfall in the production and latter slowing down in market arrivals which released the spring, as it were, and pushed the prices of foodgrains sharply upwards from the low levels to which they had fallen in 1954-55".

Though the Committee in the fourth chapter of its Report considers the areas where scarcity conditions appear first as the 'epicentre of price rise', yet the impact of regional disparities in production in relation to regional demand on prices has not so far been logically

studied. To achieve this objective it is essential to break a new ground in refining the concept of 'market' of a commodity.

PART I

Concept of a Commodity Market Refined

Marshall defines a market as : "Thus the more nearly perfect a market is, the stronger is the tendency for the same price to be for the same thing at the same time in all parts of the market ; but of course if the market is large. allowance must be made for the expences of delivering the goods to different purchasers ; each of whom must be supposed to pay in addition to the market price a special charge on account of delivery."*

It is obvious from the above definition that price uniformity has been made the basic criteria in defining a 'market'. The reason for this is, as explained by Stigler in his *Theory of Prices* "The purpose is to include individuals who together play the primary role in determining prices and quantities. For example, we shall require a market demand curve where intersection with a market supply curve explains identifiable prices and quantities. In this Paper we have set our aim to explore whether any other factor, apart from 'General' and 'specific' ones, as explained in "Foodgrains Inquiry Committee Report", exists which can also cause price variations of foodgrains. For this purpose, as will be seen shortly, sufficient ground exists to warrant a modification of the market concept and finally it will be established that there exists such a factor (a basic one) in the shape of regional variations in foodgrains production in relation to its demand and this factor seems to disturb prices even if the influence of all other factors is eliminated.

It is well known that individual demand of a commodity depends on (i) price of that commodity ; (ii) prices of related goods ; (iii) income of the individual and (iv) his tastes. Market demand is nothing but the aggregation of individual demand of all the individuals constituting the market. Market demand is, therefore, dependent upon price of a commodity, prices of related goods, income and its distribution and tastes. If it is assumed that relative prices of all types of foodgrains remain invariant, second variable, namely prices of related goods, can be omitted. For then the whole group of these commodities can be treated as constituting one single commodity.** This leaves us with only three variables, viz., (i) price level of foodgrains ; (ii) income and its distribution and (iii) tastes or dietary habits.

* Principles of Economics, Page—325

** See chapter II, Art. 4 of 'Value and Capital' by J. R. Hicks.

Level of income and its distribution as well as dietary habits of people in this country vary considerably from region to region. As a consequence, consumption pattern of various regions varies. Table No. 1 (See Appendix) shows the variations in *per capita* consumption expenditure and quantity of foodgrains consumed in rural areas according to population zones for the year July, 1949-June, 1950. Level of foodgrains consumption seems not only to depend upon level of expenditure (or income) but also on consumption pattern or dietary habits. This is amply borne out from Table No. 2 (See Appendix) in which per capita consumer expenditure by items of consumption in rural areas of various zones is shown for the year July, 1949-June, 1950. *Per capita* consumption expenditure on a particular type of foodgrains also varies as is streamlined in Table Nos. 3 and 4. This leads to the conclusion that even amongst foodgrains demand for various types of foodgrains is not uniform throughout the country but varies due to variations in dietary habits of the people in different regions.

There is another aspect of demand for foodgrains which needs special mention. A question might be asked that since all kinds of foodgrains are treated as a single commodity wherein lies the need to mark variations in its components from region to region. This query can best be answered by a quick glance at Table No. 5 (See Appendix). Caloric value per pound of few cereals is presented in this Table and a perusal shows that this value varies with the kind of grain. It is highest for rice but least for wheat (hard), barley and ragi and the difference between the two is of the order of 7.3 percent, indicating thereby, that the impact of non-uniformity of Caloric value of various foodgrains on demand cannot be ignored. For instance, in purely rice or maize consuming regions, demand for foodgrains will be less as compared to the demand in purely barley or wheat consuming centres, of course, assuming similarity of all other factors which affect demand.

Perusal of statistical Tables, given in the Appendix, leads us to infer that demand for goodgrains varies from region to region and this is entirely explained by regional disparities in (1) income and its distribution ; (2) consumption pattern ; (3) dietary habits as far as consumption of different foodgrains are concerned and (4) differences in caloric value of various food items. Therefore, while considering demand for foodgrains one has to take these variables into account. This can be achieved by defining 'market' for foodgrains on the basis of uniformity of demand curves. That is we do not postulate to define 'market' with the purpose to include individuals who together play the primary role in determining prices and quantities but with the object to include individuals whose consumption pattern of dietary habits are similar as compared with the other set of individuals whose demand curve is quite distinct in shape. This is necessary to study the behaviour of such type of individuals separately in the first instance and then to

pool the results achieved. This definition then visualises the division of this vast country into various compact and homogenious regions and explanation of price fluctuations of foodgrains not only on the basis of 'general' and 'specific' factors but also studying the impact of trade between such 'markets' or regions on prices.

Now a stage has been reached where it becomes imperative to define the problem to be considered precisely and without any ambiguity. Let us suppose that there are such 'markets' or regions in our country. Henceforth wherever region is used it should be understood in the sense of 'market' defined above. To simplify the problem let us assume that income generated by other sectors (except agriculture, to be more precise, except income generated from production of foodgrains only) in each region remains constant. Further we shall assume that prices of all non-foodgrain commodities remain invariant. Next imagine two situations : in the one (called normal situation) equality between production and demand of foodgrains exists in every region as well as at national level but in the second situation demand and production equalise for the country as a whole but not necessarily at regional level. Then ignoring time factor and problems connected with inventories altogether, and calling price level attained in the first situation as 'normal' price level, the problem to be deliberated upon is : what will be the price level in the second situation and how it will differ, if at all, from 'normal' price level ?

This problem will be studied at first on the assumption that two such markets only exist and then a generalisation in case of more than two markets will be effected. What follows ignores transport costs and the analysis is performed on the assumption of competetive market conditions.

Price Variation in a two Market Exchange

Let demand in the two markets be denoted by D_1 and D_2 and production of foodgrains in the respective market areas by S_1 and S_2 in the 'normal' situation : 'normal' price being designated as Pn. Then if M_1 and M_2 indicate money incomes from production of foodgrains in the two market areas respectively, we have following equalities in the 'normal' situation :

$D_1 + D_2$ = Total demand (D) in the two markets

$= S_1 + S_2$

= Total production (S) in the two markets are..... 1

$D_1 = S_1$ 2

$D_2 = S_2$ 3

$M_1 = S_1 Pn$ 4

$M_2 = S_2 Pn$ 5

M = Total money income of the two market areas

$= (S_1 + S_2)Pn = S Pn$ 6

Similarly, in the second situation, using the following terminology ;

D_1' = demand in the first market ;

D_2' = demand in the second market ;

S_1' = production in the first market ;

S_2' = production in the second market ;

our main assumption stipulates the following equality ;

$$D_1' + D_2' = D =$$
$$S_1' + S_2' = S \quad \text{.....(7).}$$

Again let us assume that D_1' is greater than S_1', therefore from relation (7) we infer that D_2' will be lesss than S_2'. Imagine that there is no trade in foodgrains between the two markets at first. This implies that price level will rise in the first market but fall in the second market. The extent of departure of price level in each market from 'normal' price level will depend upon (a) the gap between production in any market in the second situation and its normal demand, and (b) the shape of the respective market demand curves. Now, if trading in foodgrains is allowed the question to be considered is whether price level in the second situation will be same as that in the normal situation or will deviate from it. If P_1' and P_2' are the respective price levels in the two markets in the second situation when trade is prohibited, the price level p, achieved when trade is allowed, will take up the value somewhere between P_2' and P_1'. Three alternative cases concerning the behaviour of P as compared to Pn are to be examined. These are : (1) P may equal Pn ; (2) P may be less than Pn ; and lastly (3) P may exceed Pn. Second case can be rejected outrightly as this will lead to an increase in demand in both the markets and a situation occurs wherein gap between demand and production is created at the national level which will stimulate price rise. This leaves us with only two cases to examine.

We know that change in the price of a commodity has two-fold effect on its demand viz., the Income Effect and the Substitution Effect. The first one takes account of change in income as a consequence of change of price and the second indicates the tendency to substitute cheaper goods for a dearer one. Here we make a bold assumption that the substitution effect is negligible for each market. Though this is an unrealistic assumption at the face of it, yet it can be justified on the strong ground that consumption of foodgrains in relation to other food articles is quite stable in each market ; substitution between food and non-food articles being practically non-existent. Henceforth our analysis of price behaviour will be based on the study of the impact of change in income, consequent upon change in prices, on demand for foodgrains.

It is obvious that for some value of P, $S_2'P$ (money income of producers in the surplus market) will exceed M_2, money income of producers in the second market under 'normal' situation. This increase in money income will stimulate demand for foodgrains by these producers. This tendency is particularly marked in this country due to low standard of living of rural masses. Majority of the agricultural population is under-fed and any slight possibility of increase in money income is accompanied by an increase in consumption of foodgrains. This explains high value of income elasticity of foodgrains in India. As the possibility of P taking a value below Pn is ruled out, it is clear that whether P equals Pn or exceeds it, demand for foodgrains by producers will go up as a result of favourable level of money income.

Non-agricultural sector in both the markets has fixed money incomes and in this case demand for foodgrains will remain unaltered if P is level with Pn, but it may slightly go down when P exceeds Pn. Majority of Indian population (about 70 p.c.) being dependent on agriculture for their livelihood, decrease in demand by non-agricultural sector as a consequence of P taking a value exceeding Pn will not be sufficient to offset the increase in demand occurring due to increase in money income of producers. Thus we can categorically state that whether P equals Pn or exceeds it, demand for foodgrains in the surplus market will go up and as a consequence market demand curve in the second situation for the second market will move to the right.

Before proceeding to analyse behaviour of demand in the deficit market (first market) it is well to recollect that in deficit pockets or regions of India, people consume much less staple food as compared to normal requirements. This has a very important corollary and it is well to state and utilise it in our analysis. This corollary implies that the situation in deficit areas is such that even if money income of agriculturists decreases from existing level, it will not have much adverse effect on demand for foodgrains. That is existing level of consumption is so low that further reduction is humanly impossible without facing serious consequences.

Armed with this fact, we can resume our analysis. In the first market short-fall in production will spurt prices and this will attract supplies from the surplus market, thus tending to decrease price level till price level (p) in both the markets attains the same level. Impact of deficit in this market on money income of its producers will be governed by two factors—(a) extent of deficit and (b) level of p relative to Pn. If deficit is quite large money income of producers in this market will certainly go down as compared to their money income (M_1) in the 'normal' situation whatever the value P may have (within wide limits around Pn). In this case, we can expect a fall in demand for foodgrains but this fall will not be much as compared to the increase in demand which will occur in the surplus market. If, however, deficit

is small money income will depend upon the behaviour of P. In case of small deficit in production we can assume that money income of producers will not decrease much, so we need not worry over this case. To sum up, we can conclude that much decrease in demand for foodgrains in the deficit market will not take place. This does not imply that it will not decrease. Decrease it must but not to the extent of increase in demand occuring in the surplus market.

Bringing together the conclusions reached in the above few paragraphs, we see that when P is equal to Pn, demand in the second market will increase and that in the first market it will diminish but the increase will outwit the decrease in demand in the first market. Therefore, if equilibrium conditions are to be attained price, P, must exceed Pn so that the departure from demand in both the markets under 'normal' situation is cancelled out with one another. Of course, in this trial and error, non-agricultural sector experiences much hardships in both the market areas. Thus it is established that price level in the second situation exceeds 'normal' price level, provided, of course, the departure of production in each market area in the second situation is not too small from that under 'normal' circumstances.

Generalisation in case of more than two Markets

In case of more than two markets, some of the markets will remain self-sufficient, others will become either surplus or deficits. All the surplus, deficit, and self-sufficient markets can be grouped together respectively. Proceeding on the same lines as in case of two markets, some conclusions as to the behaviour of demand in surplus and deficit markets can be reached. In self-sufficient areas the demand will remain unaffected as long as price remains at 'normal' level. But as soon as it exceeds 'normal' price, demand will behave as if it is a surplus market, though the extent of change in demand will be less as compared to that in a surplus market.

Thus our main conclusions regarding behaviour of demand in the second situation remains unaltered and we can safely conclude that price level in the second situation will outwit 'normal' price level whether there are only two or more than two markets. This result, to repeat again, is based upon (a) the differences in demand curves of various markets or regions; (b) low level of incomes due to which majority of people are undernourished and as a consequence income elasticity of demand for foodgrains is very high and lastly, (c) our assumption that as income decreases consumption will decrease but not so much as it would increase in response to the same increase in income.

Impact of Transport Costs

Hitherto we have always abstracted from transport costs, but transport costs are quite considerable. So, now we should take into

account this factor also. In the normal situation, inter-market or inter-regional trade will be minimum as all the regions are self-sufficient. However, in the second or abnormal situation there will be considerable inter-regional movement of foodgrains and transport costs will be significant. Invariable transport costs will increase the equilibrium price level as the same cannot be transferred to surplus areas by depressing the price level there. In fact, consumers in deficit areas have to bear the main burden of these costs as their position vis-a-vis those of producers in surplus regions is very desparate indeed.

Finally, the extent of increase in price due to transport costs will be a function of location of surplus and deficit markets. If surplus areas are contiguous to deficit ones, the increase will be small but if surplus regions are separated from deficit pockets by long distances, transport costs will go up as in this case surpluses are to be hauled over longer distances, and in sympathy with this increase in costs price level will have to move up adequately.

Relaxation of General Condition of Self-Sufficiency

Thus it is seen that in this country prices of foodgrains vary even if all other factors are taken account of, save that of departure of foodgrain production from demand at 'market' or regional level, though even this departure is not assumed at national level. If, however, production at national level falls short of demand, prices will soar up to a still higher level. Here the adverse effect on price level due to two factors, viz. (a) deficit at national level and (b) departure of regional production from regional demand, is in the same direction, thereby, increasing price level. If, on the other hand, production at national level exceeds demand, price will be depressed by this factor while the other one will still raise it. Thus on the whole price change, in this case, will depend upon the relative impact on price due to these two variables, provided of course, the economy is considered to be a closed one. Still another case can be visualised when excess of production over demand at national level is quite heavy. In this case regional factor will be kept at abeyance by the fact that our assumptions regarding high value of income elasticity and undernourishment will cease to be in tune with reality then.

Policy Implications of the Analysis

Now we are in a position to classify all the factors affecting foodgrain prices into three categories. These are : (1) regional variations in production in relation to regional demand ; (2) specific causes distorting demand and supply conditions at national level and (3) general causes influencing all the commodities. Of course, first is the basic factor inherent in the Indian agriculture at present—basic because this influences price level even if the other two factors are conspicuous by

their absence. Second class of factors comes next in importance and the third occupies the last position for this group equally affects prices of all other commodities.

Hence one fundamental conclusion which emerges from this long diagnosis is that instead of national-self-sufficiency being the goal, the country should aim at regional sufficiency in foodgrain production. This will help to eliminate the distortion in price level brought about by 'regional' factor. This, however, is a long term goal and during this transitional period, manipulation of price level via strategic control over inter-market' or inter-regional trade in foodrgains cannot be avoided. But a warning here is necessary to the effect that if this strategic control is not implemented vigorously or whole-heartedly, its consequences on price level will be very serious. Till self-sufficiency at regional level is not achieved or alternatively, unless national production does not *sufficiently* exceed demand, the country has to face the adverse impact on price level of 'regional' factor.

PART II

In this section an attempt has been made to marshal statistical evidence in support of above hypothesis. In addition, it will be explained why prices during 1958-59 were at higher levels even with a record level of production. However, statistical material available here is too meagre to withstand the onslaught of a finer analysis. Therefore, a crude approach has been adopted to harness this data. All that is at our disposal consists of Statewise production figures for cereals for the last eight years, Statewise mid-year population figures and Index number of Wholesale Prices for food articles only. Production-figures have been compiled from various issues of *Agricultural Situation in India* a monthly journal published by the Directorate of Economics and Statistics, Ministry of Food and Agriculture, Government of India. These figures for the last four years are only final estimates prepared by the same Directorate. Midyear population estimates for each State are from fourth edition of *Indian Agriculture in Brief*, published by the same Directorate.

Method adopted: Production of cereals per person has been calculated for each State and for the country as a whole. It may be mentioned here that a State is taken to cover area as it emerged out after the Reorganisation of States in 1956. *Per capita* production in Union Territories has not been calculated at all. Next step is to take per capita production for All India as an average for that year and calculate the quantity of cereals in surplus States. This surplus has been calculated for each year during the period 1952-59. Taking the surplus for the year 1952-53 as 100, an index of surplus cereals which should be moved to deficit areas so as to attain uniform level of per capita cereals, has been constructed. Finally, two year moving average has been effected to get the index for each calendar year. Fortunately this step also takes account of the time-lag in the relationship between

production and prices. This index series has been correlated with the series of Index Number of Wholesale Prices. If 'regional' factor influences price level, a strong positive correlation between the two series should be expected and *vice-versa.*

It may be pointed out that while calculating *per capita* production, no effort has been made to use mid-agriculture year population figures. Another limitation of this method is that impact of imports of cereals has not been taken into account at all.

Price Trend : As mentioned in the beginning of this paper, two distinct price trends are discernible since the beginning of First Five Year Plan. These are a sharp decline which touched the bottom in 1955 and a gradual sharp rise since then. Economic Adviser's Index Number of Wholesale Prices for food articles (base year 1952-53) attained the average of 85.4 in 1955. In 1956 it was 99 and in 1957, 106.8. Next two years saw a steady advance in the Index, it being 111.9 in 1958 and 118.1 in 1959. Thus we have to focus on the decline in 1954 and 1955 and after that, the rise in price in the subsequent years is to be explained.

Production Trends : The reader is well advised to study Table No. 2.1 very carefully. But before examining it critically, we must correlate the series, indicating excess grain which must be moved from surplus States to deficit ones so as to equalise *per capita* cereals in every State, and the Index number of wholesale prices for food articles only. A casual glance at the figures given in Table No. 2.2 does not fail to indicate a strong positive correlation between the two series. But one should not read too much from these figures as there are many drawbacks in these figures which have already been pin-pointed above.

TABLE 2·1

Per person pronction of cereals in each State of India

(in lbs.)

States	Per person production of cereals in the year						
	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Andra Pradesh	315	386	372	340	351	386	371
Assam	403	394	397	377	387	353	362
Bihar	241	274	196	249	318	334	288
Bombay	235	300	321	265	284	282	308
Kerala	89	125	136	131	131	127	127
Madhya Pradesh	421	488	460	480	544	474	591
Madras	220	333	328	312	323	319	307
Mysore	257	327	352	345	278	318	259
Orissa	351	355	340	322	340	271	304
Punjab	204	450	395	423	415	475	472
Rajasthan	234	478	384	388	347	477	468
Uttar Pradesh	292	310	334	316	305	304	314
West Bengal	365	469	316	345	375	338	328
Jammu and Kashmir	200	231	192	220	223	184	266
Indian Union	288	347	326	321	326	315	346

TABLE 2.2

Year	Index of surplus cereals in surplus States (base 1952-53=100)	Index Number of Wholesale Prices for Food Articles (base 1952-53=100)
1953	123	108·9*
1954	122·75	98·2
1955	106·25	85·4
1956	119·5	99.0
1957	146	106·8
1958	158	111·9
1959	—	118·1

*Average of last 9 months only.

Before concluding this paper, a few observations on Table No. 2.1 will suffice here. This Table reveals that *per capita* production of cereals has been varying from year to year. It reached the maximum value in 1953-54 and again in the year 1958-59. In between it has been fluctuating. One abvous fact emerging from this table is that production has always remained below the requirements. Thus during the period under review, fluctuations in prices caused by regional factor have been reinforced by those caused by deficiency in production at national level. Even if the last cause is not taken into consideration, the first one seems to be quite active as is evident from Table No. 2.3.

TABLE No. 2·3

Year	Index of surplus cereals in surplus States (based 1952-53 = 100)
1952-53	100
1953-54	146
1954-55	99·5
1955-56	113·0
1956-57	126
1957-58	166
1958-59	140

One question may be asked that in the year 1958-59, though the *per capita* production figure was quite high as compared to those in earlier years and also the Index of surplus cereals in surplus areas was at a lower level than in 1957-1958, yet the prices in the year 1959 continued to rise. This paradox can be resolved by considering the factor of transport costs in the last two years. For this we have divided the country into four parts, viz. (1) Northern part, comprising the States of Jammu and Kashmir, Punjab, Rajasthan and Utter Pradesh, (2) Western part consisting of Madhya Pradesh, Bombay and Mysore ; (3) Eastern part constituted by the States of Bihar, West Bengal, Orissa

and Assam; and lastly (4) Southern India covering the States of Madras, Andhra Pradesh and Kerala. In Norther India, Punjab and Rajasthan were surplus in both the years though *per capita* production declined in 1957-59 as compared to the position attained in 1957-58, yet this decline in 1958-59 seems to be compensated by a rise in *per capita* production in Uttar Pradesh and Jammu and Kashmir. In Southern part of the country, there was a reduction in production in the surplus State of Andhara Pradesh while in deficit Madras position also deteriorated but in Kerala it remained the same in both the years. There fore, in this part position deteriorated in 1958-59 as compared to that found in an earlier year. Similar is the case with Eastern States. Here the position was the worst during 1958-59 as Bihar and West Bengal recorded a very low per capita production while in Orissa and Assam, a slight improvement was recorded. But on the whole the conditions during 1958-59 were no better in this part also. Lastly, Western India saw the emergence of Madhya Pradesh as a bigger surplus area. Position of Mysore became worse considerably while that of Bombay improved a bit. Therefore, on the whole we observe that though *per capita* production in 1958-59 was far above the level attained in 1957-58, yet the surplus States were so situated that transport costs to be incurred on moving the surpluses were expected to be unusually high. This coupled with the irrational formation of food zones seems to have pushed the prices upward in 1958-59.

Gwalior (M.P.) O.P. ANAND

APPENDIX

TABLE No. 1

Foodgrains consumption and consumer expenditure in different population zones (in rural areas only) during July 1949 June 1950)

Population Zones	Foodgrains consumption per person (in srs.)	Consumer expenditure per person (Rs.)
1. North India	229·75	205·11
2. East India including Andmans and Nicobar	204·35	210·44
3. South India	182·81	208·82
4. West India	161·12	253·01
5. Central India	183·01	197·73
6. North West India	281·85	313·88
India Total	202·74	219·72

Source :—National Sample Survey—Report No. 1 on First Round.

TABLE No. 2

Consumer Expenditure per person by items of consumption in Rural Areas of various Population Zones (during the year July, 1949-June, 1950)

Iteams	NORTH INDIA			EAST INDIA			SOUTH INDIA			WEST INDIA		
	Consumer expenditure per person	P.C. to Total exp.	P.C. to exp. on Food	Consumer expenditure per person	P.C. to Total exp.	P.C. to exp. on Food	Consumer expenditure per person	P.C. to Total exp.	P.C. to exp. on Food	Consumer expenditure per person	P.C. to Total exp.	P.C. to exp. on Food.
Foodgrains	86·72	42·27	60·69	103·25	49·07	69·09	73·91	36·45	54·09	58·40	23·09	42·74
Pulses	10·36	5·05	7·25	7·54	3·58	5·04	7·10	3·50	5·19	8·00	3·16	5·86
Edible Oils	7·95	3·87	5·56	8·05	3·82	5·38	9·61	4·74	7·03	10·53	4·16	7·71
Vegetables and Fruit	6·00	2·93	4·19	7·34	3·49	4·91	8·89	4·38	6·51	8·50	3·36	6·22
Milk and milk products	18·32	8·93	12·82	6·98	3·32	4·67	9·08	4·48	6·64	24·67	9·76	18·06
Meat egg and fish	1·91	0·93	1·34	6·85	3·25	4·58	7·57	3·73	5·54	2·70	1·07	1·97
Refreshments	0·53	0·26		1·31	0·62		5·50	2·71		6·28	2·48	4·59
Salt and Spices	5·06	2·42	3·54	5·37	2·50	3·59	10·40	5·13	7·61	6·28	2·48	4·59
Sugar	6·03	2·94	2·05	2·75	1·31	1·84	4·57	2·25	3·34	11·26	4·45	8·24
Food Total	142·88	69·65	100	149·44	71·01	100	136·63	67·37	100	136·62	54·01	100
Non-Food	68·77	30·35		61·00	28·99		66·19	32·63		116·39	45·99	
Grand Total	205·11	100		210·44	100		202·82	100		253·01	100	

Source :—National Sample Survey Report No. 1 on First Round.

TABLE No. 2—Contd.

	CENTRAL INDIA			NORTH WEST INDIA			ALL INDIA		
	Consumer expenditure per person	P.C. to total expenditure	P.C. to expenditure on Food	Consumer expenditure per person	P.C. to total expenditure	P.C. to expenditure on Food	Consumer expenditure per person	P.C. to total expenditure	P.C. to expenditure on Food
Foodgrains	68·64	34·72	55·31	115·89	36·93	54·35	85·05	38·70	58·88
Pulses	7·84	3·97	6·32	5·35	1·70	2·52	7·86	3·58	5·89
Edible Oils	6·99	3·54	5·63	6·64	2·12	3·11	8·32	3·79	5·71
Vegetables and Fruit	7·82	3·96	6·30	5·57	1·77	2·61	7·46	3·40	5·12
Milk and milk Products	14·23	7·20	11·46	59·71	19·03	28·01	17·06	7·77	11·71
Meat, egg and fish	3·80	1·92	3·06	1·71	0·54	0·80	4·72	2·15	3·24
Refreshments	2·08	1·05		1·72	0·55		2·71	1·23	
Salt and Spices	7·81	3·96	6·29	6·48	2·07	3·04	6·88	3·13	4·72
Sugar	4·88	2·47	3·93	10·14	3·23	4·75	5·62	2·56	3·86
Food Total	124·09	62·79	100	213·21	67·94	100	145·66	66·33	100
Non-Food	73·64	37·21		100·53	32·06		74·06	33·69	
Grand Total	197·73	100		313·88	100		219·72	100	

TABLE No. 3

Value of consuption of Foodgrains etc. in Rupees per person per week in Rural Area of different Population Zones (During April June, 1951)

Population Zones	Consumption in Rupees per person per week of										
	Rice	Wheat	Jowar	Bajra	Maize	Barley	Small Millets	Ragi	Gram	Main Food-grains including gram	All Food-grains
North India	(14·11)	(34·03)	(2·49)	(0·41)	(1·66)	(32·37)	(1·24)	(0·83)	(12·03)	(99·17)	(100)
	0·34	0·82	0·06	0·01	0·04	0·78	0·03	0·02	0·29	2·39	2·41
East India	(81·17)	(6·69)	(0·84)	(0·42)	(0·42)	(4·18)	(0·42)	(0·84)	(4·18)	(99·16)	(100)
	1·94	0·16	0·02	0·01	0·01	0·10	0·01	0·02	0·10	2·37	2·39
South India	(56·72)	(1·49)	(10·94)	(2·99)	(1·00)	( )	(3·48)	(17·91)	(1·49)	(96·02)	(100)
	1·14	0·03	0·22	0·06	0·02	—	0·07	0·36	0·03	1·93	2·01
West India	(17·34)	(20·23)	(17·34)	(26·01)	(0·58)	(1·56)	(6·36)	(6·93)	(2·87)	(98·86)	(100)
	0·30	0·35	0·30	0·45	0·01	0·02	0·11	0·12	0·05	1·71	1·73
Central India	(36·02)	(22·28)	(29·86)	(0·48)	(1·90)	(1·42)	(1·42)	(0·47)	(14·27)	(98·12)	(100)
	0·76	0·47	0·63	0·01	0·04	0·03	0·03	0·01	0·09	2·07	2·11
North West India	(3·32)	(36·90)	(1·85)	24·35)	(3·69)	(15·13)	(2·58)	—	(11·81)	(99·63)	(100)
	0·09	1·00	0·05	0·06	0·10	0·41	0·07	—	0·32	2·70	2·71
All India	(43·36)	(18·14)	(8·41)	(5·31)	(1·33)	(9·74)	(1·77)	(3·98)	(6·19)	(98·23)	(100)
	0·98	0·41	0·19	0·12	0·03	0·22	0·04	0·09	0·14	2·22	2·26

Note :—Figures within Brackets indicate percentages to total expenditure on all Foodgrains.
Source :—National Sample Survey No. 2 Page 25 Table (9).

TABLE NO. 4

Value of Consumption of Foodgrains etc. in Rupees per person per week in Rural Areas of different Population Zones (during August Nov. 1951)

Population Zones	Value of consuption of Foodgrains per person per week of										
	Rice	Wheat	Jowar	Bajra	Maize	Barley	Small Millets	Ragi	Gram	Main Food-grains	All Food-grains
North India	(22·91) 0·55	(28·33) 0·68	(1·67) 0·04	(1·67) 0·04	(7·92) 0·19	(17·50) 0·42	(2·50) 0·06	(0·83) 0·02	(11·25) 0·27	(94·58) 0·27	(100) 2·40
East India	(77·66) 2·12	(8·06) 0·22	(0·36) 0·01	(0·73) 0·02	(4·40) 0·12	(0·37) 0·01	(1·85) 0·05	(2·56) 0·07	(2·93) 0·08	(98·90) 2·70	(100) 2·73
South India	(52·85) 1·02	(1·56) 0·03	(18·65) 0·36	(5·69) 0·11	(1·04) 0·02	(...) ...	(3·11) 0·06	(12·95) 0·25	(0·52) 0·01	(96·37) 1·86	(100) 1·93
West India	(19·68) 0·37	(18·62) 0·35	(25·53) 0·48	(16·49) 0·31	(1·60) 0·03	(...) —	(9·57) 0·18	(3·72) 0·07	(3·19) 0·06	(98·40) 1·55	(100) 1·86
Central India	(34·67) 0·69	(15·58) 0·31	(31·66) 0·63	(1·51) 0·03	(5·52) 0·11	(1·01) 0·02	(1·51) 0·03	(1·01) 0·02	(5·02) 0·10	(97·47) 1·94	(100) 1·99
North West India	(3·45) 0·08	(40·09) 0·93	(3·88) 0·09	(14·22) 0·33	(8·62) 0·20	(12·93) 0·30	(1·78) 0·04	(...) ...	(14·66) 0·34	(99·57) 3·81	(100) 2·32
All India	(44·89) 1·01	(16·00) 0·36	(11·11) 0·25	(4·45) 0·10	(4·89) 0·11	(4·89) 0·11	(12·67) 0·06	(3·55) 0·08	(5·33) 0·12	(97·78) 2·20	(100) 2·25

Note :—Figures within brackets indicate percentages.

Source :—National Sample Survey, Report No. 3, Page 35-Table No. (12.).

TABLE No. 5

Caloric Value of various Cereals

Cereals	Calories per 100 gms.	Calories per lb
Weat (medium)	334	1515
Wheat (hard)	332	1506
Wheat (soft)	333	1510
Rice (husked or brown)	357	1619
Barley	332	1506
Maize	356	1614
Bajra	348	1578
Raji	332	1506
Unspecified Millets	340	1542

Source :—Food Composition Tables F.A.O. Publication on Nutritional Studies No. 3.

THE DEVELOPMENT BANKS[1]

Introduction

THE origin of the concept of 'Development Banks' can be traced back to the beginning of the twentieth century, when the Industrial Bank of Japan was established in 1902. However, the specific need for such specialised institutions was felt in the last two decades, when even countries like the U.K. and the U.S.A., despite their highly developed capital markets, had to establish new institutions. Underdeveloped countries which started ambitious plans of economic development and were not equipped with a developed capital market faced this problem more seriously and had to take recourse to establishment of new specialised institutions. The purpose of this paper is to discuss some of the problems of development banks with particular reference to India.

What is a 'Development Bank'?

The very idea is brilliantly brought out in the name itself; firstly, it involves the banking or financing function and secondly, it indicates the nature of such finance as being primarily developmental or long-term. The word 'Development', in its broader sense can include the functions of promoting industries, fostering entrepreneurial abilities and setting up of new units etc.

A distinction is sometimes made between a *finance* corporation and a *development* corporation; the former is primarily concerned with long term loan capital, whereas the latter is primarily concerned with equity capital and assumes responsibility for fostering and managing specific companies as well as providing financial support.[2] This does not involve however, water-tight division between these two types of institutions; as very often we find it difficult to categorise the nature of the work done by each. Mr. William Diamond describes Development Banks as catalysts for investment in the private sector, to provide injections of capital, enterprise and management and not merely as administrative devices to handle the government's own investments.[3]

Need for Development Banks

While considering economic growth of a country the problem of capital formation comes to the forefront. Economic growth largely

[1] Development Banks may exist in Agricultural as well as in Industrial fields. We are, here, dealing with those which cater to industrial development.

[2] U. N.—Mobilisation of Domestic Capital: Report and documents of the Second Working Party of Experts—ECAFE, Bangkok, 1953, pp. 7-8.

[3] William Diamond—'Development Banks'—The Economic Development Institute I.B.R.D. 1957, p. 4.

depends on the rate of capital formation and when a country plans to attain a high rate of growth, particularly through ambitious programmes of rapid industrialisation, the availability of industrial finance appeares to be the major bottleneck in the process. On the one hand there is a growing need for more and more finance as the development process gathers momentum but on the other hand the capital markets are ill-equipped to provide for the financial needs. This situation leads to serious problems and a solution is sought in the establishment of new institutions with one of their main purpose being to provide long-term finance for industries.

Experiments with mixed banking were tried in Western countries and particularly in Germany where they worked with astounding success. In this method both commercial banking as well as long term financing were combined together in the same institution and enabled the latter to play a great role in the industrial development of those countries. In underdeveloped countries, however, the situations are different and we cannot rely on these methods to attain our objectives. Even though the commercial banks are showing a tendency towards providing medium term finance to industries through term lending etc. they cannot, definitely, undertake the major responsibilities of catering to the growing needs of the expanding industrial sector and hence can. at the most, act as a supplementary source and not the main purveyors. This problem becomes more acute in the case of small industries. Even a developed country like the U.K. faced the problem of the 'Macmillan Gap' culminating in the establishment of the Industrial and Commercial Finance Corporation in 1945.

Special institutions are also necessary for the purpose of canalizing the available funds in most desirable manner. When a country is having a definite plan for the industrial development along certain lines this purpose acquires greater importance. The rate of economic growth depends on *how* and *where* the funds are invested. This specific task needs to be handled by specially trained experts. The development banks can be of help in this respect. This need is felt more in the private sector. In the public sector, the allocation of funds is done by governmental machinery and managed in a method planned by the state. But in the private sector the allocation of funds to proper industries and in a most suitable manner needs to be controlled by some specialised institutions and this job can be entrusted to development banks in their jurisdiction.

Structure of Development Banks

There is so much variety in these institutions that no two of them are exactly alike. They differ in ownership, nature of assistance, eligibility of the loanee, purpose of assistance, area of operation, size of industry etc. The pattern depends on the individual case of the coun-

try concerned and the Bank (*a*) adopts a suitable form and shape as the circumstances demand.

(a) *Ownership of the Bank:* Most of the Banks have been established on the initiative of the Government and quite a large number are owned by the respective governments of the various countries. This can be exemplified by the data available for about seventy such institutions which are members of the International Bank (This excludes Banks in the highly industrialised countries of Western Europe, in United States, Canada and Australia).[4] Out of seventy Development Banks, as many as 47 or 67% are wholly owned by Government. This is quite natural in view of the paucity of funds in underdeveloped areas and is also in keeping with the principle that the government should take initiative in developing such institutions.

Once the government takes the initative, the contribution from the private sector is also forthcoming as can be witnessed by seventeen such institutions in whose cases the ownership is mixed. In eleven cases the majority is that of public funds while in the remaining six, private sector holds majority of funds. It is also gratifying to note that there are development banks which are entirely owned by private capital, their number being six in the above list. It shows that private capital is coming forward and filling the gap in the financial structure of these Corporations. The Industrial Credit and Investment Corporation of India is the best illustration in this connection. The other institutions are established in Turkey, Ceylon, Lebanon, Pakistan and South Africa.[5]

(b) *Ownership and type of the industrial unit:* Generally the development banks lend their assistance to industries in the private sector. Some of these institutions limit the scope of their activities to 'public limited companies', e.g. IFCI. while others extend facilities to 'private limited companies' or proprietorship concerns also. In many cases, it seems that the corporate enterprises are preferred mainly because of their better management and soundness. Particularly, these enterprises can give scope to the public participation in future course. In India, cooperative enterprises are to be encouraged as a matter of government policy and hence we find that large amount of loans of the IFCI have gone to the cooperative industries in recent years.

Most of the banks help industries in processing and manufacturing sector only, naturally due to their importance in the developmental

[4] Shirley Boskey—'Problems and Practices of Development Banks'—I.B.R.D. 1959. Appendix A—pp. 129-132. The word 'Bank' with capital 'B' is used henceforth to mean 'Development Bank'.

[5] *Ibid.*, p. 9.

process. A few of them have a wider coverage including shipping and mining concerns, whereas some go to the extent of helping service industries (hotels) or housing projects etc. Since the institutions have been established with a special and urgent purpose, they should, necessarily, choose between the various industries and give priority to the industrial units that are basic to the rapid industrialisation process. There is no point in extending their assistance to all sorts of industries, without considering their relative importance in the development programme.

(c) *Size of Industry:* Some Banks make a distinction between the size of the applicant. Industrial Finance Corporation of India, for example, gives loans to large industries only, whereas State Finance Corporations have been established in different States of India to cater to the needs of small industrial units. The reasons for the preference of the one or the other type are manifold such as limited funds, impact of supply of funds on the whole economy (in case of large industries it is supposed to be the greatest), better management of the enterprise (this again is in favour of large industrial concerns), Bank's purposes of giving loans,[6] availability of other sources of finance and risks involved in financing small enterprises.

(d) *Form of assistance:* As we have mentioned above, the development banks have two major functions; one, of granting long-term loans and the other, of taking participation in equity capital and assisting other developmental problems of the particular industries. Many banks assist the industries by granting loans or participating in equity capital according to the preference and convenience of both the parties, but some of them like IFCI are statutorily debarred from undertaking equity participation. On the other hand ICICI grants loans as well as buys shares of the companies. In some cases the Banks are given choice of converting the loans into equities at a later date.

There is an overall scarcity of *risk* capital in underdeveloped countries and hence the special institutions established for rapid development of industries in these areas ought to take into consideration the genuine need of the kind of industrial finance required in these countries. Moreover, under constant inflationary pressures the real value of money erodes fast in the long-term process and hence the Corporations will be at a loss in the real sense. The third point that goes in support of equity participation is that the development banks which help the growth of particular industrial units in their crucial period should be allowed to participate in the profits made by these units at a later stage when they become prosperous.

[6] Some Banks have been specially established to cater to the needs of small industries only. For example, the National Small Industries Corporation established in India in February, 1955.

Another chief bottleneck facing the development of industries in less developed areas is that of foreign exchange and it is quite appropriate to expect the development banks to come forward to the rescue of private sector in this connection. A major illustration in India is that of ICICI which has already utilised about $20 million of foreign exchange loan from the World Bank and which is granted a fresh loan of $20 million recently. This serves a definite purpose and helps the industries to overcome their foreign exchange difficulties.

Technical assistance is of immense help to the industries in this part of the world. Usually they lack trained personnel and are often unaware of modern and up-to-date techniques of production. The development banks can have a pool of technical personnel and they can extend the services to their loanees as well as to other industrial units in the country, after charging them regular fees where necessary. It would involve certain expenses for the Bank in the beginning but it will serve the much needed purpose in these countries.

(e) *Purpose of Assistance:* The development banks assist either the existing industrial units in their expansion and modernisation programme or the new units which are being set up. Usually the Banks perform these functions simultaneously. It is a healthy trend that in general the Banks focus their attention more on the establishment of new industrial units,[7] and thus help in the promotion of industries in the underdeveloped areas. This reflects the response that these Banks get from new enterprises which are badly in need of financial and other assistance. Till the end of June 1959 about fifty per cent of the IFCI loans have gone in aid of setting up of new industrial units.

Some of these institutions, though established for a general and broad purpose of rapid industrialisation, in fact, become highly specialised institutions and restrict their scope to a very limited field. The illustration of this type is the NIDC in India which had become a Government Agency for modernisation and rehabilitation of jute industry and cotton textile industry,[8] particularly in its early days.

(f) *Location of banks:* In some countries there are more than one such institutions. Sometimes they differ in their fields of operation e.g. Agricultural and Industrial Banks, while in other cases they are situated to suit to the different parts of the vast country conerned. In India, we have a network of such institutions. The IFCI has its head office in Delhi with branches at Bombay, Calcutta and Madras, and there are State Finance Corporations in various States located to suit the needs of the industrial units in those States. In Nigeria, also, there are regional development corporations. The regional development banks are particularly useful for the benefit of small indus-

[7] *Op.cit.* pp. 64-65.

[8] The NIDC Annual Report for the year ending Dec. 1955, p. 3.

tries in whose case full understanding of local problems is not always easily possible by the Bank's main offices which are often situated at far off places.

Sources of Bank Funds

As we have already noted above the majority of the Banks are government owned and hence their finances have come wholly from the respective governments. Even those which have mixed ownership receive finances in large part from the government thus leaving very little margin for the private sources to fill up. The private sources usually consist of institutional investors like banks, insurance companies etc. In case of ICICI thirty per cent shares belong to foreign institutional investors in U.S. and U.K. The Pakistan ICIC shows an example of majority shareholders as private individuals (as at May 1959, out of 675 shareholders 383 were private individuals and 203 were industrialists and businessmen). The Development Bank of Turkey, also, has many individual shareholders.

As for the debt-equity ratio there is no one single correct ratio but the International Bank suggested a 3 : 1 ratio for banks in Turkey, India, Pakistan and Iran, which it helped to establish.[9]

As far as the loans to these Banks are concerned, most of them have taken assistance from their respective governments. In certain cases, the Banks have sold their own obligations in the market and successfully collected the required funds. It was done usually with a government's guarantee to facilitate the procedure. The total amount of bonds outstanding in case of IFCI at the end of June, 1960 was Rs. 22.24 crores which came to nearly 50% of the total capital. The main source of foreign loans is the International Bank, the U.S. Development Loan Fund and the U.S. International Cooperation Administration. These loans helped the Banks to fill in the foreign exchange gap of the industries. In some cases like the IFCI, statutory arrangements are made for the acceptance of long term deposits from public, but they have not been utilised so far.

Uses of Funds: Selection Criteria

If the sources of funds are important for the understanding of mobilisation of capital, for the more important function of channelisation of resources we have to analyse carefully the uses of funds, that is, how and on what basis the enterprises are selected to receive the financial assistance. Like other financial institutions, development banks cannot look upon profitability or the earning capacity as the main criterion for granting loans. Nor can there be suggested any single scale of priority for the use of all development banks.

[9] Shirley Boskey—*Ibid.*, p. 24.

In countries where definite planning programmes are pursued there already exists a priority list of the planning authority for the general guidance of the Banks. Particularly, where the Banks are owned by the government or where the government has sufficient control over the Banks the selection of the enterprise is expected to go along with the priorities already decided by the government for other purposes. This can be effectively managed by the coordination between the various government authorities such as those granting new licences, giving licences for imports etc.

Especially in connection with new industries the test of profitability can hardly be applied without previous experience and hence the Bank will have to decide on the basis of future prospects of the industry concerned and its relative importance in the planning programmes. IFCI states that it is going to help those enterprises only which fail to attain necessary finance from all other sources. The public institutions can underrate the importance of returns on their investments if they consider that the importance of the industry and its rapid development is more important for the economy as a whole.

In some cases distinction is made between financing for fixed assets and financing for working capital and it is emphasised that the development banks should cater to the needs of financing fixed assets only and leave the working capital financing to the care of commercial banks and such other short term sources. However, this distinction is very subtle and in a rapidly developing economy part of the working capital requirements have to be necessarily considered as long term requirements and hence there is nothing wrong if the development banks supply funds for this purpose. Moreover, in cases where the development banks supply funds by acquiring the first mortgage right of all the fixed assets (and which is usually the case), it may not be possible for the loanee concerns to obtain additional huge funds needed for financing working capital. It would, therefore, be incumbant on the part of the Banks and in the interest of both the parties to supply funds in such cases (IFCI has granted loans to the industrial units for financing working capital, only in cases where the concerns have obtained loans previously for financing their fixed assets requirements). Hence, for practical purposes there is nothing wrong if a development bank provides finance for working capital requirements, although it should be only in special cases.

The relationship of the loanee concern and the Bank does not stop at the level of sanctioning of the loan but actually becomes closer thereafter. In some cases the Banks appoint their own nominees as directors. Thus the close supervision of the loanee company's operations and utilisation of funds etc. is made possible in a permanent manner. Reports are submitted to the Bank about the working of the industries concerned from time to time and the Bank reserves the

right of periodical inspection. It also involves technical assistance and general advice in many respects.

Role in the economy: Development of Capital Market

While assessing the importance of development banks in the economic growth of less developed countries, we have to take into consideration mainly the following two criteria; first, the mobilisation of savings and second, channelisation of the available resources in a most productive and planned manner. There is no doubt that the development banks, by themselves, may not be able to increase the savings potential in underdeveloped countries but it should be possible for them, particularly in countries where they are supported by government funds to encourage private savings to come forth for venture capital. They can restore confidence in public and help to create a healthy climate for provision of risk finance in these countries. It is regretted that not much effort has been made in this connection and this important function is partly overlooked in many cases. In a developing economy a new class of small investors emerges whose attention can be diverted to equity finance by the establishment of Investment Corporations. This will fill in an important lacuna in the present structure of financial intermediaries in underdeveloped countries and serve the needs of many small investors.[10]

As noted earlier, a few Banks have sold their own obligations in the market and collected large amount of funds. Thus, they become an instrument in the capital market.[11] Banks in India and Pakistan are authorised to underwrite new issues. This is an important function as there are no other special institutions in these countries which perform this necessary function. If the scope of the underwriting operations is widened and genuine underwriting is undertaken it will act as a fillip to the growth of capital markets in these countries. This will inspire confidence in public and evoke their direct participation in industrial securities.

The development banks have to start on a strong financial basis and, therefore, contribution by governments is important in the preliminary stages. Moreover, under recurrent inflationary surges people may not be willing to give long term *loans*. In such cases *equity* finance is the most appropriate solution and development banks can take bold steps in this direction. It is important that the enterprises should be provided with capital on reasonable terms. The rate of interest

[10] Experiences in Turkey and Nigeria about small investors' participation in equity finance are quite encouraging.

[11] The experience of South Africa and Mexico is also very encouraging and it suggests that this method will contribute to a great deal in development of capital markets of respective countries. In South Africa they tried to attract savings from local persons for a specified project and found the method very successful.

charged by most of the development banks is usually lower than the 'market rate'.[12]

Another important aspect is the inflationary impact of financing of these development banks. The Banks which receive most of the funds from Government or Central Bank are bound to create certain inflationary pressure in the economy, whereas, with the growth of private savings flowing into the capital structure of these institutions, the inflationary impact will be reduced. At a later stage, development Banks should be financed more out of private funds.

As we have already noted earlier, channelling funds to the most productive purposes is the most important function of the development banks. By coordinating actions of the Bank and the policies of the government, good results can be achieved in a short time; this can be exemplified by the assistance given to the industries like cotton, jute and sugar (Cooperative sector) in India. The IFCI has established advisory councils for different industries and these committees take the decision in granting of loans etc. In case of the Bank which establishes new concerns itself, the problem becomes easier and clearer. The public institutions act according to the government's directions and thus a coordination between the government policies and priorities of plan can be affected without any difficulty.

Foriegn exchange requirements are satisfiied by institutions like the ICICI and loans have been granted to such institutions by the International Bank etc. In underdeveloped countries. finance is not the only important bottleneck but enterprise and technical and managerial skills are not less important. The development banks, with collaboration of other international institutions like World Bank can manage to have the services of foreign experts for their benefit and train their own staff. The development banks can also do a great deal in the field of research in industry by undertaking surveys for that purpose. Public institutions can be expected to play a major role in this respect. They can discover new lines and methods of production and give a lead to the private sector.

Many institutions are in a preliminary and experimental stage, but on the whole, there is a healthy trend in establishment of development banks in less developed countries and in some of them, they have achieved good results and tried to assist the capital markets to a considerable extent. They have a wide canvass to work on, and if properly guided and operated, they will undoubtedly make a significant contribution to the growth of the private sector and thereby to the economic development of these countries.

Bombay. M. S. JOSHI

[12] *Ibid.* p. 78.

REVIEWS

Malthus and Classical Economics: Popular Book Depot.: Bombay. By S. AMBIRAJAN, 1959.

THIS reviewer feels rather strongly that this book is a perfect illustration of the kind of doctoral dissertation a student in India should not be permitted to write. The student himself implies as much when he says in his Preface (p. viii) "I could not, of course, hope for such advantages or library facilities as are open to a student working in Oxford Cambridge or London..." and again "An oftcultivated field like Classical Economics doesn't offer much scope for originality." Similarly he underestimates the attention given to Malthus the political economist in recent works on the history of economic thought. With the many lacunæ in the knowledge about economic development in general and India in particular this leads to a bad violation of the principle of comparative, if not absolute, advantage in economic research.

The book itself is divided into four parts. Malthus and his Age (2 Chapters), The Theory of Population (3 Chapters), Other Economic Theories (5 Chapters), and a Conclusion. Throughout the book Ambirajan discusses Malthus by comparing him with other writers and comparing the views of other writers on Malthus. This is done to an extent that at times the reader finds it hard to follow the trend of Malthus' argument and even harder to get the author's interpretation. The extent to which the author quotes from others, rather than telling his own story, makes the style of the book often prolix and obscure. Why, for instance, does he have to quote Fetter on Whately to make a point about Malthus (p. 186)?

Lest the foregoing sounds too negative and critical let me hasten to add that this book does make available to the student the economic writings of an important epoch of the classical period which in this reviewer's view is still important in understanding the basic anatomy of the process of economic growth.

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Public Finance and Full Employment: With special reference to Underdeveloped Areas. By V. V. BORKAR, University of Bombay, Publications Economic Series No. 9, Vora & Co. Publishers Private Ltd. Bombay (1959), Price Rs. 12.50, pp. 170.

Dr. Borkar's study is concerned with "the general theory of employment and prices as applicable to underdeveloped systems." He attempts "a comparative study of the theory of employment in well developed and underdeveloped system" based mainly "on the application to underdeveloped areas of the Keynesian theory which has almost universal acceptance in current discussions elsewhere".

Borkar rejects the argument that in an underdeveloped economy like India there already exists full employment in the Keynesian sense and that therefore "classical and not Keynesian economics applies to underdeveloped systems." If unemployment in the Keynesian sense is of the involuntary type, surely the mass unemployment that one observes in over-populated underdeveloped countries cannot be considered voluntary. And still there is a difference. Under the Keynesian definition, any volume of labour which is not prepared to accept a wage rate equal to its continually falling marginal productivity is consistent with full employment. This, Borkar argues, is sensible so long as the wage offered affords "a fair standard of living". In underdeveloped countries, because of the shortage of "aggregate productive capacity" the marginal productivity of labour "when all or most of it is employed is zero or perhaps even negative". Persons who refuse to accept a zero or negative wage "are obviously involuntarily unemployed and yet they are left outside the purview of the Keynesian concept". Therefore, the strict Keynesian definition does not pose the problem of underdeveloped system adequately. "Employment to have any meaning must signify employment at least at a living wage. No employment at a wage rate below this should be taken cognisance of as such. This is sheer unemployment ....."

Now, involuntary unemployment in developed systems is the result of deficiency of demand. To the extent this is so even in an underdeveloped system, it may be helpful to stimulate aggregate effective demand. But once the wage-level reaches the fair minimum, "after that point, however, effective demand will spend itself in raising the general price level, rather than the level of employment," if employment is defined in Borkar's sense of employment at a living wage.

Borkar's argument thus far is summed up as follows: 'Only uptill the level of full productive capacity employment Keynesian remedies hold good for any economic system in general. In a well developed economy, this point is reached after full employment ..... On the contrary, this point is reached sooner, and long before full employment, in an underdeveloped community. Hence, Keynesian theories are applicable partially, that is only until this point is reached and thereafter, the causes and cures for unemployment should be sought elsewhere ..... There is no quick or spectcular remedy to solve this problem". Some, if not all, of the "responsible economists" whom Dr. Borkar takes very seriously to task for saying that Keynesian full

employment has already been achieved in an underdeveloped economy like India will be justified in asking, if his conclusion is really new. This is precisely what they have been arguing. In fairness to Borkar it must be said in his defence that his way of presenting the problem is helpful because it keeps reminding one that a part at least of the unemployment problem may be of the Keynesian type needing Keynesian remedies. One only gets the impression that Borkar makes a little too much of his "discovery" and others' "ignorance".

As Borkar himself says, "the really difficult part of the problem of unemployment begins in underdeveloped systems where it appears to end in developed ones." The problem of full employment in the former is closely connected with the problem of creating productive capacity. This reminds one of the classical accent on capital accumulation in order to secure growth and increasing employment.

Having defined full employment and on discovering the gap between his definition and the actual state of full employment, Borkar takes to a long and torturous part with a view to finding out the role of public finance in such a situation. Public finance says Borkar, has to fulfil a threefold role : 1) as a mechanism for the direct creation of productive capacity ; 2) as a weapon to control and regulate the volume and direction of private effective demand and ; 3) as a balancing factor. Obviously, the first part of the prescribed role should get the highest priority, the second part assumes significance in order that attempts at maximizing investment do not lead to inflation and are not misdirected and the third merges itself with the second when the purpose is to keep the economy on an even keel, while investment is being stepped up. This is how the present reviewer sees it. But if one follows Borkar's arrangement of topics, the second seems to come first : perhaps Borkar will plead not guilty to this charge. Perhaps he devotes a lot of his attention to the "control of effective demand" because he thought that thinking on this subject was particularly underdeveloped in the underdeveloped systems.

Anyway, even Borkar's exposition on the control of effective demand is not very enlightening. His study of the three functions, the consumption function, the investment function and the liquidity function is based on a comparison of a well-developed system having a "highly developed money and capital market" but working at a level below full employment and also full capacity with an underdeveloped system which is generally working at full capacity but faces unemployment and has underdeveloped money and capital market. Such a comparison is open to objection firstly because in the postwar years developed systems are known to be working more under the strain of excess demand i.e. at levels of full capacity (working) than from deficient demand and it would be more meaningful to compare a well-developed system working at the full employment level

with an underdeveloped system working at the full capacity level. Then, for instance, one could not argue, as Borkar does, that the I-function is more income-elastic in an underdeveloped system than in a developed system.

Similar objections can be raised to his conclusions with respect to the elasticity of the liquidity and consumption functions. Therefore, his conclusion that 'a combination of interest inelastic L-function, interest and income elastic I-function and income elastic C-function indicates that a purely monetary policy will be eminently successful in raising or restricting effective demand in an underdeveloped system " is open to grave doubt. True, Borkar hastens to qualify the above statement by suggesting that as L-function in an underdeveloped system is perfectly interest-elastic (a statement which again is difficult to accept) a purely monetary policy may remain ineffective because " M cannot increase apart from and prior to increase in effective demand, and is effective-demand oriented ". Therefore, monetary policy has to be backed by a suitable fiscal policy.

That is how fiscal policy comes into the picture. There is "a variety of fiscal policies involving both balanced and unbalanced budgets ". Here Borkar argues that when an underdeveloped system is operating below full capacity level it should incur " budget deficits financed from loans from the central bank ", and that even afterwards " a small dose of like-financed deficits would be useful ". Of course, " inflation is the most obnoxious and regressive from of taxation " and 'support to a policy of inflation ... is misconceived ".

When the economy is working at the full capacity level, indirect taxes assume " importance as a weapon of control ". To Borkar, " it is preferable to secure restriction of consumption through imposition of indirect taxes rather than through direct inflation " even though both raise prices, although while arguing in defence of prohibition, he seems to be indifferent between the two modes of restricting consumption. To quote him : " conversely, if deficit spending is likely to drive up the general price level, with the exhaustion of this idle capacity, similar will be the effect also of increased public spending from the yield of taxes on liquor consumption ".

Then follows a review of the economic trends and fiscal policy in India in the recent past. It will interest readers to know what Borkar feels with respect to the fiscal policy during the second plan period. " The trends exhibited by fiscal policy ..... broadly in the right direction ... (therefore) the main features of the present fiscal policy deserve to be preserved and consolidated ". Borkar contests the suggestion that the price-rise in the first two years of the Second Plan could be called inflationary because " the 7 percent rise in general price index reflects the 11 percent rise in food grain prices ". One is tempted to

ask if he would call the current rise in prices in general inflationary because the food prices are registering a slight decline whereas prices of manufactures are rising every week but still the level of unutilised capacity remains at around the same level. (Incidentally, the present reviewer is highly sceptical of the figures given by Dr. Borkar with respect to the level of unutilised capacity for the manufacturing industry.)

To conclude, the problem of securing full employment engages and baffles all serious students of economics in this country. Does Dr. Borkar offer any 'quick and ready' solution? No. On the contrary, his main conclusion is that "unemployment, disguised and otherwise, will linger on for years together in an underdeveloped country even with the adoption of the most scientific and ideal policies".

Baroda. I. S. GULATI

Problems of Economic Growth: By M. K. HALDER and ROBIN GHOSH, editors; *Congress for Culture Freedom,* Office for Asian Affairs; New Delhi, Prabhakar Padhye, 1960. Rs. 4/- 229 pp.

IN April, 1957, a conference on the problems of economic growth was held in Tokyo, organized by the Congress for Cultural Freedom and supported by a grant from the Ford Foundation. This volume presents eight papers, in abridged form, out of the sixteen papers submitted at the conference, plus excerpts from the discussions.

The result is a highly readable book which should be of interest and help to a wide audience of non-economists. To the professional economist it is more tantalizing than informative. As the talk skims lightly over the surface of many subjects, the thoughful reader will wish for more rigorous analysis and for more data; at times, he will itch to get into the discussion himself. For example, when W. Arthur Lewis states his belief that a dictatorship can increase output faster than a democracy (and that we should sacrifice some growth for the sake of democracy), one would like to hear that proposition fully argued. Is he exaggerating the contribution of forced saving to growth or the speed with which compulsion can change traditional attitudes and institutions? Is he underestimating the adverse effects of dictatorship on economic efficiency and initiative? Is he applying the case of the Soviet Union to the quite different conditions of Asia and Africa? Or is he using the case of China, and, if so, what honest data about China have we, and which side of the argument do they support? (Possibly some fuller discussion of this and other subjects was lost in the abridging process).

There are many stimulating insights and thought-provoking passages to be found throughout the book. Edward Shils (University of Chicago) considers the important role played in economic development today by the intellectuals, in contrast to the minor part assigned them in the development of the West. Intellectuals in any country may be poor risks as leaders of their society because, by their nature, they are separated from the core of their society; in underdeveloped countries, where the gulf is likely to be greater, the performance of intelectuals as leaders may be even poorer. A further problem arises when the public officialdom absorbs the intellectuals; having lost their independence, they can no longer fulfill the role for which they are best suited and urgently needed, as critics of the government. Shils's recommendations for promoting responsible and competent criticism in economies dominated by government call for the government to strengthen the calibre and the independence of two potential sources of criticism: the universities and the press. But a voluntary surrender of influence and an invitation to criticism is too improbable a form of government behaviour to excite our hopes.

Rudolph Bicanic (University of Zagreb, Yugoslavia) in his paper "Economic Growth under Centralized Planning," compares the growth of national product in Yugoslavia during four years of highly centralized planning and four subsequent years when decision-making was decentralized and considerable scope given to private and individual initiative. The remarkable acceleration of growth after the decentralization and relaxation of controls, accomplished despite a decrease in the proportion of national product devoted to capital formation, throws some doubt on the efficacy of totalitarian methods for rapid growth. Unfortunately, Bicanic leaves open the questions of whether some of the growth in the decentralized period was not a lagged effect of the efforts of the previous period and whether it would have occurred even without the economic reforms. Further investigation can doubtless provide some answers to these questions.

M. L. Dantwala concisely reviews the land reform policies of India and makes some enlightening comments on the practical difficulties of carrying out the program. Asoka Mehta discussed his view of the limited, primarily co-operative, role that trade unions should play in developing economies. Amlan Datta deals with a technical problem of planning: in countries with redundant supplies of labour, the wage rate exceeds the alternative cost of labour; if labour were hired according to a "shadow" price reflecting labour's alternative cost rather than its actual price, labour-intensity should be increased and current output raised, but the surplus of enterprises would be reduced, and thereby total saving and the rate of growth would be reduced; thus, unless additional fiscal measures could be undertaken to offset the drop in saving, there would be a conflict between maximizing current output and stimulating growth.

B. F. Hoselitz (University of Chicago) discusses the tendency toward "over-urbanization" in Asia and the desirability of encouraging the development of medium-sized urban centers to check the flow of population to a few giant cites. Ayo Ogunsheye (University College, Nigeria) comments on the proportion of national income spent on public education in India, Ghana and Nigeria and conjectures about possible explanations for India's relatively low proportion.

The ideas and the talent displayed in this book only make one think of how much more satisfying would have been the product if the funds that went into the meeting had been devoted to the underwriting of individual research and the battle of ideas, fully presented and documented in print. The Organization Man's faith in conferences has spread to the scholars. There may, of course, be hidden benefits to knowledge from such meetings, but on the evidence of this conference report alone, the faith seems misplaced.

New York GERALD SIRKIN

Size and Distribution of Holdings by M. Sultan;

Rural Credit and Cooperation by Q. U. Khan;

Survey of Milk Production by M. Sultan;

Survey of Rural Employment by M. Sultan;

Published by the Jamia Institute of Agricultural Economics and Rural Sociology, Jamia Nagar, New Delhi.

These four publications from the Jamia Institute of Agricultural Economics and Rural Sociology contain brief but useful studies of important aspects of economy of a group of villages in the neighbourhood of Delhi City. The Institute has the unique distinction of participating in the developmental programmes for these villages and the research activities have been oriented to the objective of assisting the implementation of these programmes. It is, therefore, a little surprising that the studies do not go much beyond providing a neat and systematic statement of existing conditions in the villages. This is especially true in relation to later studies which were undertaken at a point of time, presumably, affording an opportunity to observe the impact of developmental programmes.

The first study pertains to two villages, one unirrigated and the other irrigated by the water supplied by the Okhla Sewage Water works. The study seeks to compare the size and distribution of holdings between these two villages, though no startling conclusion appears to emerge from it. The second study brings out a rather dismal finding that cooperative societies "have not been playing any re-

markable role in the social and economic uplift. The village money-lenders, shop-keepers and commission agents... not only continue to occupy their former positions; but are actually increasing their hold on economic life of this area". The third study indicates that inspite of the nearness of a large and ready market for liquid milk in Delhi city, the majority of milk producers failed to obtain substantial additional earnings from milk production. The main lines for reorganisation of this important supplementary source of earnings for cultivators are laid down as elimination of dry, superfluous cattle, provision of bulls of good breed, provision of veterinary aid and cooperative organisation of milk-producers. The last study contains little by way of general interest.

Bombay V. M. RAO

The Two Plans: Promises, Performance, Prospects—By DEENDAYAL UPADHYAYA, (Rashtradharma Prakashan Ltd. Lucknow, 1958, pp. 282, Price Rs. 7.50 nP.).

THIS book, though written by a leader of a political party, presents much useful information about the first and the second plan. Many of the criticisms levelled against the plans are fair and based on data.

The author pleads for a greater emphasis on agriculture and wider role for private sector. The author feels that at the national level socialism might mean only nationalising the big business in monopolistic position but at the State, district and the village level it may take an oppressive form when say the fishing rights and the plying of the carts to the market are vested in the village panchayat,. The author is afraid of blind application of the socialistic principles at all levels. In this connection, however, it must be observed that while at the national level there have been progressive legislations, at the lower rungs the implementation has been insincere. The difficulty in India has been not one of a blind application of a particular ideology at all levels but one of ideological confusion. One would have expected a more detailed discussion of the ideological confusion and the political pressures shaping the plan policies. The author has correctly drawn attention to the anamolous position of the Planning Commission. The book will be of use to general readers.

Bombay V. N. KOTHARI

The Skills of the Economist: By KENNETH E. BOUILDING, (London, Harish Hamilton. 1958, pp. vi+193).

THIS is a small book describing the author's view on the 'scope and method' of economics. The first chapter deals with 'Economics is what Economists do.' This chapter surveys both classical general equilibrium and the Keynesian equilibrium. Next the author discusses

marginal analysis in a chapter headed 'A Universe of Commodities'. He poses the question of the usefulness of marginal analysis to the practical entrepreneur as contrasted with the abstract entrepreneur. He finds that marginalism is unpopular with business executives not only because of the inadequacy of the marginal analysis in the cases of multiple maxima and of the discontinuities in the transformation function but particularly because of the problem of 'what is maximised!' Economic theory solves it by calling it profits. 'Two problems face us at this point. One is the measure of the profit itself. The other is the present belief in the business community that a decent, respectable or even merely cautious and conservative businessman would not want to maximise profits even if he knew how to do it.'

Regarding the measure of profit even a priori 'net revenue' is not a sufficient measure once we introduce in our analysis the element of time and capital structure. We have, therefore, to consider some kind of 'rate of return'. Once we introduce the idea of the 'rate of return', a single transaction is not able to give us the 'essential nature of the profit making process'. As we introduce more transactions 'the process of profit making' may involve a 'process of making losses,' so that at a particular point of time it is very difficult, if not impossible, to make a distinction between 'the process of making a profit' and a 'process of making a loss'. The marginal analysis fails us altogether. Even if one can decide about the 'process of profit making' there is a further difficulty in so far that the 'profit making process' being one in which a complex aggregate of many different kinds of assests is in some way increased, leads to a valuation problem and any system of valuation will yield some anamolous results. The problem does not end here. There is a further difficulty in the concept of a 'rate of return' because a 'rate of return' is necessarily a 'rate of growth'. This involvement of the 'rate of growth' opens up a new plane where the marginalism does not lead to any definite and certain conclusion. 'Thus the marginal analysis is not what it has sometimes been thought to be—a theory of economic behaviour.'

In the third chapter 'Organisation and Communication' the author explores a theory of economic behaviour. Since the term behaviour implies organisation or organism, a theory of behaviour *ipso facto* involves a theory of organisation. There is clearly a distinction between organism and things that are not organisms. This distinction is based on a difference between (1) adjustment and use of environment and (ii) simple cause and effect relation to environment. For example; a stone breaks (effects) under the blow of hammer (cause). An animal does not just starve when food is not available; it may move about to other areas or it may withstand a short period of hunger. So organisms have some independence of short term changes in immediate environment. A firm, for example, attempts to preserve itself and continue existance even in face of adverse changes in its circumstance. Many

times it tries to make favourable changes in its circumstances. Organisations are characterised by something like a physical balance sheet or position statement by a learning or adoptive process, by a capacity for growth or development into a limited number of potential lines. The author suggests some lines of thought on the theory of organisation but does not pursue it at length.

To provide a theory of economic behaviour the author takes the simplest from of behaviour and enunciates the theory of homeostasis behaviour. Homeostasis is the ability of an organisation to maintain a given structure in the face of a changing environment. To explain he takes the example of a thermostat. The homeostatic in this case is the temperature for which the thermostat it set. If the actual temperature rises, the behaviour within the system takes place in order to correct this situation—the furnace is turned off and *vice versa.* He applies the theory of homeostasis to economic organisation. Thus if a firm sells to a consumer some amount of a commodity on the basis of homestasis, it would like to replenish the stock to the previous level. This will generate demand in the material market and the raw material market will generate demand in its raw material market and so on. This leads us to the classical stationary state. The concept of homeostasis is also applicable to growing organisation and societies. The rates of growth can themselves be considered as homeostatic variables and this gives us a homeostatic rate of profit. However the homeostatic will not explain the problems of increasing or decreasing rates of growth. There one may have to borrow the principle of non proportional change. But once we get into the theory of growth there are a good number of questions that remain unanswered. The author however contents himself with the more humble homeostatic ground.

But the question is what does the author want and hope to achieve from the theory of homeostatic ? Evidently he wants to provide a theory of economic behaviour. In the marginal analysis, theory of firm is built on simple stimulus and response behaviour ; price rises, firm reacts by producing more upto the point where its marginal cost is equal to the new price. The main point of the organisation theory is that the response is not necessarily that simple. It depends upon the whole system of servo mechanism and its six organs. The author seems to be working ideas so that he can develop a theory of economic behaviour. So far however, he is simply making a suggestion. The implications have not been worked out. He has made these suggestions earlier also. He has not been able to provide full theory as yet. The great merit of the suggestion is that one looks at the whole body of economic behaviour from a new angle. Whether this will lead to a new theory or end into a blind alley only the future will tell.

In the next chapter on the "Economists' Vision of the Economy" he discusses mainly the economists' influence on the objectives of eco-

nomic policy. In the fifth chapter 'Trade—not Aid for the Sciences' he suggests the interconnection between the different sciences and makes a positive suggestion for the analysis of the crisis of the present century. 'In this century there are only two autonomous centres of of power—a political duopoly'. The result is a frightening internal instability and intensity of international conflict. Here he applies the theory of oligoply which says, the more the parties in competition the less they are likely to run into a highly dangerous and unstable race.

In the last chapter on 'Economic Ethic and Heroic Ethic' he shows how the economist can clarify the difficult dilemmas of human behaviour arising from a conflict of welfare functions of different groups.

This short book is extremely well written. It is entertaining, simple and easy to read. The quality that makes it so interesting and at the same time so lucid is the prolific use of analogies. One cannot resist the temptation of reproducing two of them here. About marginal analysis he writes. 'Inspite of all the space given to it in the text books of economics, the marginal analysis appears to be more of a front porch than an integral part of the edifice of economics. It is a large and imposing porch trimmed with fine arches and handsome diagrams but it could be torn down and a different structure erected without seriously affecting the main building'.

Writing about the different sciences, he says 'knowledge is a many storied building where there is a poor elevator service between floors and each discipline occupies a different floor. The floor plans on all levels are much alike inspite of a balcony here and a recess there. The reason for availing one self of the occassional elevator is that most of the basic phenomena of the empirical world are to be found in all sciences—behaviour, interaction, growth and decay'.

The book would be interesting to a layman for its review of the essentials of economics and for the criticism of economic theories which it introduces. It is a very stimulating and thought provoking book for the economist since it attempts a new approach to the whole mass of economic phenomena from the point of view of 'organisation and communication'.

Chandigarh R. K. DIWAN.

Resource Prospects of the Third Five Year Plan: By DR. I. S. GULATI, Bombay, Orient Longmans, 1960.

THE problem of resource mobilisation in the Third Plan calls for more attention than what has been paid to it till now. Dr. Gulati's book, in

this respect, is a timely attempt to estimate the resource prospects for the Third Five Year Plan. ".The estimate is based on current trends in the economy and some assumptions regarding the manner in which existing resources can be more intensively harnessed and new resources tapped. .... Practically all the detailed calculations of resources are made on the basis of definite proposals regarding the best means of exploiting various techniques of resource mobilisation".

The study is divided into eight chapters. The introductory chapter is devoted to the approach to the problem. The various sources of revenue, namely, budgetary savings, capital receipts, deficit financing, agricultural taxation, non-agricultural direct taxes, taxes on commodities, and finally, the gap in the resources are discussed in this order in the rest of the chapters.

The author takes the targets for granted but not the resources, because the targets are planned for after deciding upon certain economic objectives. Given the targets of investment outlay in the total economy as well as in the public sector, he proceeds to analyse the direction in which the maximum effort could be made for the financial resources with the present financial structure and additional sources of revenue. Estimates in each chapter are made under relevant assumptions.

The budgetary savings that would be available for financing the Plan are estimated on the assumptions (a) that rates of taxation will remain unaltered; (b) that both the receipts and the non-developmental expenditure will register increases in consonance with the rise in the national income and other relevant factors; and (c) that public enterprises will gradually start yielding profits at the same rates as prevail in similar enterprises in the private sector. Additional assumptions are made while estimating revenue from each source like income tax, customs, excises and industrial enterprises. Similarly capital receipts from small savings, deposit heads, opem market loans and prize bonds have been estimated. It is interesting to note that the author warns and rightly so that prize bonds should be regarded as an additional source of savings. Otherwise the issue of prize bonds may adversely affect the receipts from small savings. But experience in prize bonds till now is not too happy. With such a start it is difficult to hazard any guess on the prospects for this source which the author seems to be in a haste to estimate. If the scheme is to continue at the present pace, the question of its effect on small savings will not arise at all.

The author says that he has adopted a definition of deficit financing which is different from the Planning Commission's. Any definition of deficit financing will have a meaning depending on the

purpose of definition. Because the author wants to measure the inflationary impact of the budget operations, his definition is more appropriate than that of the Planning Commission. Essentially any definition of deficit financing in India should be for the purpose the author has in the mind because the loan receipts of the government are not included in the definition as they are considered asset creating. It is interesting to note that the author places it at Rs. 1,320 crores compared to the Rs. 550 crores at which the Planning Commission puts it in the Third Five Year Plan.

In his analysis of agricultural taxation the author rightly points out that there is a strong case for the imposition of additional taxes on that class of agriculturists whose non-agricultural counterparts are subject to income tax. But the analysis he adopts to measure the differences in the tax burden between agricultural and non agricultural income earners does not seem to be very convincing. Even if the correspondence between expenditure, income and size of holdings is accepted, it is difficult to agree with the author that tax based on land will be progressive in incidence when it is related to the total income or expenditure of a household. The fact remains that the richer agricultural classes save a part of their income. The author's calculations indicate that the expenditure and so the income (taking the author's own estimates) in the highest rung is spent just as in the one privious to it and nothing is saved. There are several doubts that arise to a discerning reader if the Appendix I is gone through carefully. Though the author's conclusions is acceptable that the higher agricultural income groups should bs taxed more than at present, the procedure leaves much to be desired.

Further though one may agree with the fact that agricultural income tax is not properly administered, centralized administration is no solution. The vicissitudes to which agriculture is subject need not be introduced into the central revenues. Non-agriculturists do not suffer such income changes as agriculturists. So far as agricultural income tax is concerned, the States take the income computations of the Central income tax authorities in the case of the companies as the base to levy the agricultural income tax, which only means that the States should raise the rates of agricultural income tax because the bulk of the revenue is from companies. Where individual farmers have small plantations the accounting problems are such that the experience gained in the administration of non agricultural income tax does not help much. The better method would be to administer agricultural income tax more rigourously and at the same levy a progressive land revenue on the basis of two factors, namely, the size of the holding and the type of the crop cultivated. The author's estimates of the progressive land revenue also suggest that there are great possibilities in that direction.

On non agricultural taxes the author comes out with some bold suggestions. His studied analysis provides much food for thought though one may not wholeheartedly agree with him. He suggests that the rates applicable to middle and lower income groups in Indian income tax should be raised. But because the business income groups in these brackets evade tax in no insignificant amounts, unless provision is made to check evasion by them the tax would become very inequitous at this level.

The author recommends the wealth tax not for itself only but also because it helps to check evasion of income tax because wealth is a source of income. He recommends that the exemption limit for wealth tax should be reduced to check evasion if the income tax rates are raised.

He recommends that the surcharge on income tax be abolished because he has recommended increase in tax rates on the lower income groups which will also affect the higher income groups.

The author's recommendations for the withdrawl of concessions in several cases are very interesting. The author says that the tax holiday on profits of new undertakings and the development rebate on new plant installed after 31st March 1954 are concessions which are overlapping in nature. He argues very ably to indicate the difference between the two and how they have affected the industrial pattern. He suggests that only those industries which have been assigned a high priority in the Third Five Year Plan should be given both the concessions. For the rest he recommends only a depreciation allowance as was being given to the plant and new machinery not eligible for the developmental rebate, before 31st March 1956. Of course, enough safeguards have to be provided to secure that these allowances are used for developmental purposes than for the distribution of high dividends. He also suggests that the exemption of dividends of new undertakings should be immediately withdrawn.

At present life insurance premia and provident fund payments are allowed abatement of income tax provided the amount paid does not exceed in aggregate one fourth of the total income of the assessee or Rs. 8,000 for an individual and Rs. 16,000 for a Hindu Undivided Family which ever is less. The author argues that so far as this concession is concerned as an incentive to save, it benefits mainly the upper income classes. The upper income groups would, at any rate save and no special incentive is necessary to make them save. He, therefore, suggests that the concession should be drastically reduced to benefit those who really require an incentive to save, namely the lower income groups. This suggestion may help in collecting a larger amount of tax from the upper income groups. But it is questionable

whether it would be sufficient incentive to make lower income groups save. The concession will be very small compared to the amount insured for to act as, an incentive to save. In the lower income groups it is the willingness which is more of an incentive. The author recommends that the concession given to Hindu Undivided Families for the purpose of income tax should be completely revised. The recommendations include non-recognition of partial partition for income tax purposes, prohibition of transfer of assets to wives of members with a view to avoid tax liability, and where the assessee is a member of a Hindu undivided family the inclusion of his share in the total income, credit being given for the proportionate share of the tax paid by the Hindu Undivided Family.

All these recommendations of the author seem quite reasonable and justifiable.

In his chapter on Commodity taxation, the author favours the levy of excises and proceeds to analyse the commodities on which they could be levied. In the selection of commodities the author say that a number of considerations should be kept in mind. On a few commodities high rates of duties are imposed to restrict the consumption. There are a number of items which got unintended protection because of the drastic cut in imports. The items chosen should not figure in family budgets. From the administrative point of view the items chosen should be easily taxable. Therefore if among the commodities already liable to excise duty it is possible to raise additional revenue, the rates on some of them should be raised. With these considerations in view the author recommends that the excise duty on diesel oil and kerosene oil, tobacco and tobacco products, and matches be raised. In order to reduce the advantage which railways get over road transport by the additional levy on diesel oil, the author suggests that the tax on railway freights and passenger fares be raised. The author also suggests the revival of the duty on salt. On some of the goods which received unintended protection due to restrictions on imports the author suggests the levy of the excise duty.

In concluding his discussion on taxation the author suggests "in so far as the country's development programme has to be financed through the medium of taxation, the bitter pill of indirect taxation, assuming that all indirect taxes are regressive, will have to be swallowed during the Third Five Year Plan period and may in a still larger measure in the plans to follow".

After calculating the revenue from the existing sources and those which he has recommended, the author derives the foreign exchange gap as the residual. This is with reference to the Public Sector only. If the private sector is also included the author estimates the total gap to be about Rs. 1,345 crores for the total plan of Rs. 10,000

crores. This would be so " provided the very pattern of investment programme does not necessitate a large measure of assistance from outside to cover the import-content of the projects included in the programme ".

In the last chapter where he measures the foreign exchange gap the author states " there is no doubt that the estimates made in this study are projections made on the basis of the various hypotheses including the hypothesis that the resources-effort will be forthcoming on the part of the government in the necessary doses and in the direction indicated. In that sense these estimates are hypothetical. So is the case with all planning ". This statement indicates that the author does not disown the responsibility for the assumptions on which the whole study is hemmed. But such a study cannot possibly avoid assumptions. The author could have very well left out the theoretical interjections because they seem superfluous and also confusing in some instances. But one question remains to be asked : How will these measures affect the savings of the private sector ? Because on the answer to that question will depend the performance of the private sector for investment purposes.

The author should be congratulated for collecting such a mass of data and analysing them with detailed footnotes and references. Appendices II and III are devoted to the estimation of receipts from income tax in the Third Plan period and the range of avoidance of income tax respectively by the Hindu Undivided Families and provide some useful data. The book contains an index also.

Bombay K. SUBRAMANYAM.

NOTES

Some Notes on "Gold and the Dollar Crisis"

I

In his review article[1] on "Gold and the Dollar Crisis," Dr. Doodha has raised some interesting issues in connection with the Triffin Plan[2] involving internationalization of foreign exchange reserves held by countries outside the United States and the United Kingdom and the reshaping and reconstitution of the International Monetary Fund ('the Fund' referred to hereafter) into some sort of an international central bank.

Professor Triffin's diagnosis of the problems faced by the present system of world trade and payments is note-worthy but the remedies suggested by him need closer scrutiny and little more discussion. Our purpose here is to consider some of the aspects of the Triffin Plan not covered in the above article and offer some comments on the issues raised by Dr. Doodha.

II

The analogy between the national central banking and the international central banking cannot be pressed too far. The working of the international central bank will have its limitations not present in case of national central banking. The international central bank—the central bank of central banks—shall have to deal with different countries with different economic philosophies and different government policies and programmes of investment and employment. Once the countries have exchanged their foreign exchange reserves for the deposits of the Fund, the latter will find it difficult to control and regulate the use of such deposits by their owners. Now this need not be taken as a serious objection, for the Fund need not do so. This is so far as the principle of deposits creating loans is concerned. But Professor Triffin, argues that the Fund would work not only on the investment banking principle but also on the commercial banking principle of loans creating deposits. In otherwords, the fund would not work merely on hundred percent reserve system but it would be endowed with powers of creating additional (international) purchasing power. The obvious question is: What will be the limits on the Fund's credit creating powers? or, what will be the limits on the Fund's lending operations in terms of loans, advances, overdrafts etc.? Professor Triffin, again doesnot visualise any fractional reserve system.

[1] This Journal, October, 1960, p. 159.
[2] R. Triffin, "Gold and the Dollar Crisis", Yale University Press, 1960.

But he argues that the Fund's net lending operations, over a year, would result into a total amount that would, together with current increases in the world stock of monetary gold, increase gross world reserves by say 3-5 per cent a year. Any arithmetic limit would be arbitrary and if and only if the rate of growth of world reserves is faster than the rate of growth in real trade and production, the Fund's lending operations are likely to lead to inflationary abuses. Besides according to Professor Triffin himself, the exact figure at which gross world reserves should increase would in any case depend in practice upon the compromise between divergent national viewpoints. Moreover, the Fund's lending operations would not be automatic and amount of the loan, purposes for which it is put to use and its maturity would be made conditional on the broad economic and financial policies that the member countries concerned should pursue. All this would involve, to be sure, a good deal of centralisation of investment decisions *vis-a-vis* domestic economic policies that might not be acceptable to the countries concerned.

III

Under the Triffin Plan, the Fund would give an exchange guarantee (gold guarantee) on the deposits lodged with it by various countries. But the Fund itself would incur an exchange risk arising out of exchange depreciation of the currencies now held by the Fund. These currencies would be mainly dollar and sterling. This point was was raised by Mr. F. G. Hirsch[3] who argued that Professor Triffin assuumes that the countries like the United States and the United Kingdom would give exchange guarantee on their currency balances and claims on them held by the Fund. But Mr. Hirsch comes to a wrong conclusion that such guarantee "would virtually rule out the possibility of devalation for the rest of the century". Such exchange guarantee need not result into any restrictions on these countries' freedom to devalue their currencies (of course such possibilities seem remote), but they shall be compelled in any case to compensate the Fund and write up their liabilities to it.

According to the Triffin proposals, the short term liabilities owed by the United States and the United Kingdom to various countries would be converted into long term debt to the Fund and this debt would be amortized over a period of years. According to the Plan, the Fund would like to see that the liquidation of the debt proceeds, say at 5 per cent per annum. On this basis, the yearly liability for repayment involved would be, in case of the United Kingdom, at the least about 125-150 million pound sterling. (At the end-1959, sterling liabilities of the United Kingdom to various countries were 3,507 million pound sterling. Out of this, about 2,500 million pound sterling was

[3] "Development and world Reserves"—F. G. Hirsch, p. 148. The Banker March 1960.

held by central banks and other official. The liabilities to non-territorial organisations amounted to 705 million pound sterling. We here take the figure of 2,500 million pound sterling—the liabilities held by central banks and other official agencies). This amount (involved in annual repayment) forms the sizeable portion (about one half) of the long term investment made abroad by the United Kingdom. This leads to pressure on the investible resources of the United Kinkdom In order to honour its obligation to the Fund, the United Kingdom might find it necessary to reduce the outflow of capital to other countries mainly the less developed countries of the sterling area. This would create difficulties for countries with liquidity shortage. However it is argued that the bilateral financing is replaced by the multilaternal financing by the Fund. On this count, there is no increase in world liquidity. But this leads to centralization of investment decisions and a break and discontinuity in the present mechanism of bilateral financing.

Professor Triffin's contention that the reserve position of 'key currency' countries like the United States or the United Kingdom would not be able to withstand the strains arising out of movements of funds, from sterling into dollar or *vice versa* or from both into gold, is taken to its logical extreme. Professor Triffin here completely ignores the second-line reserves of these countries obtainable from the Fund through their own quotas. In fact, during post-war period, sterling position and sterling area reserves were considerably strengthened by credit made available by the Fund. Assistance extended by the Fund during the Suez crisis is one of the outstanding examples of this. As a result, in times of strains, the United Kingdom and the Sterling Area did not find obliged to impose trade and payments restrictions. The system of world trade did not collapse. The superfical glance at the country's reserve position is misleading. Even the ratio of America's gold assets to short term dollar liabilities is still about 100 per cent.

IV

Dr. Doodha in his article criticised that "Professor Triffin advocates the adoption of a gold exchange standard devised with full convertibility rights". He questions: "But is this really necessary? Have we not outlived the era of the gold exchange standard? Can't we not emerge into the already accepted tradition of a fiat currency standard?" Then he goes on to argue that "so long as gold is not demanded, the fabric works smoothly, but once a crisis of confidence occurs and every body demands gold, the whole thing will collapse. The reconstituted I.M.F. will have a built in death knell!" This is not the fair criticism of the Triffin proposals for they are precisely those that would prevent 'a crisis of confidence' from occuring. Under the Triffin Plan (whatever may be the other difficulties involved

as mentioned above), deposits with the Fund would be fully guaranteed against any exchange loss and fully convertible into any currency. Thus deposits are as good as gold, but infact they are superior to gold as the form of holding foreign exchange reserves. Deposits would earn a rate of interest while gold will not. Guarantees against inconvertibility and exchange loss combined with earning incentives are sufficient reasons for the central banks to prefer the deposits rather than gold as the medium of holding their foreign exchange earnings.

Thus the gold exchange standard that Professor Triffin advocates is merely a window-dressing device; it would exist in theory only. Professor Triffin says "convenience and earning incentives have so far prompted countries other than the United States and the United Kingdom to retain on the average more than half of their gross reserves in foreign echange rather than gold".[4] The following figures[5] are cited from his book:

Proportion of Gold and Foreign Exchange to total Monetary reserves outside the United States and the United Kingdom (in per cent)

Few select years	Gold	Foreign Exchange
1948	33	67
1949	41	59
1951	41	59
1953	41	59
1955	42	58
1957	45	55

Now with the convertibility and exchange rate guarantee under the Triffin Plan, the proportion held in gold is likely to decline. Yet Professor Triffin is fully aware of the danger of gold shortage. He says "yet provision would have to be made to safeguard the Fund's liquidity .... against unforseen conversions of excess deposits into gold ....."[6] He suggests some ways of guarding against this danger, for example, the immobilising certain (minimum) portion of deposits in terms of gold.

Secondly, Dr. Doodha suggests the modified plan under which the present working of the Fund would remain unaltered; that is to say that the Fund's main source of liquidity would be member countries' quotas, three-fourths of which are callable in local currencies and the rest is paid in gold. But "to this, is now to be added the function of accepting demand deposits both from Government and private individuals." But Professor Triffin's objections to the Fund quota system are not given due attention that they deserve. He quotes Article V, Section 3, Subsection (A) which provides that

[4] R. Triffin, *op.cit.* p. 113.
[5] *Ibid.*, Table 12, p. 55.
[6] *Ibid.*, p. 114.

"A member shall be entitled to buy *the currency of another member* from the Fund in exchange for *its own currency* subject to the following conditions: (i) the members desiring to purchase *the currency* represents that *it* is presently needed for making *in that currency* payments which are consistent with the provisions of the Agreement."[7] This, according to Professor Triffin, is very bizarre. He argues that it is very difficult, under convertibility conditions, to identify *any particular currency* as needed by a member. And secondly "the Fund Agreement allows members to purchase foreign currencies in exchange for their own currency i.e. in exchange for their own I.O.U.'s—but not in exchange for other foreign currencies owned or acquired by them. To Professor Triffin, such a provision is anamalous and does not enable the Fund to fulfill effectively one of the main purposes of the Fund, i.e. "to assist in the establishment of a multilateral system of payments in respect of current transactions between members....." And Professor Triffin belives that this weakness in the Fund Agreement "made it necessary to set up in 1950 a separate institution, the European Payments Union to restore a multilateral system of settlements among the European countries and their associated monetary areas." He incidently notes that the establishment of non-resident convertibility by major trading countries provides an alternative machinery for the multilateralization of payments but at the same time he feels that "it doesnot, however, dispense with the need to discourage through international cooperation and agreements later relapses into inconvertibility by a country in difficulty, nor with the need to help other countries withstand the impact of such a decision by one of their major trading partners."[8]

Bombay. AJIT BHAGAT

Facts As Touchstone of Economic Values

"VALUE" in economics means the ratio of exchange or price. It also means value in use or utility. Here the concept of value or valuation is used in a broad sense embracing all situations of scarcity wherein a choice is effected as a result of evaluation of alternatives. And this process of evaluation is best done in relation to facts rather than in the abstract, purely as mental process through introspection. A fact is taken to mean an observable phenomenon susceptible to some kind of mesurement. The need for testing economic values with relevant facts is the objective and substance of this paper.

The topics treated are (1) the nature of economic choice (2) the limitations of an abstract economic theory crying for substance (3) the thirst for facts in the context of a purposive social policy and planning (4) the basic bilateral nature of scientific process—with equal emphasis

[7] *Ibid.*, p. 116. The italics are his.
[8] *Ibid.*, p. 116, footnote 18.

on theory and facts (5) Facts as limiting factor in casual analysis which is necessary to frame appropriate policies in a given situation (6) finally, the limitations of quantitative approach and its implications—value judgement and policy suggestion. Nevertheless the imperative need of the time is to have a compromise in humble submission to human values.

Economic Choice and Valuation :

Economics deals with the influence of scarcity on human conduct in the allocation of scarce resources, given the freedom of choice. It involves a twofold process of rationalising human behaviour based on introspection (largely looking into ourselves) and observed facts in an effort to build up generalisations. But choice, overt or inert remains the core of the economic problem. In fact, choice is to be considered as the explicit or overt expression of the internal state of valuation. One has to compare X and Y and value X better than Y, in order to strive for the attainment of the former. In economic valuation it is not always necessary to choose X instead of Y, based on a particular " property " of X or instrinsic quality or goodness but probably because of a " relation " between the person who demands that particular " good " and the " good " itself. It is the " desiredness " rather than the " desirability " for a particular good that determines the choice. In other words, the " demand " in economic analysis means a conative expression or act of willing and striving rather than a cognitive one which is the outcome of a perfect knowledge about the attributes of goodness associated with a particular object. Habit and knowledge, or even ignorance do have their say in making a particular choice. Choice, however, implies a process of evaluation or comparison. But this act of comparison becomes meaningful and operatively significant if it is undertaken through the medium of facts and the higher the degree of correlation between ideas or ideals and reality or facts, the greater will be the usefulness of such knowledge or science. The problem of choice emerges as there are alternative ways of using resources to produce a given product. Though technical science might suggest the physical relationship between resources and product, the problem of choice involved is that of economics when we are interested in maximising net gain in a particular enterprise.

Theory Without Facts :

In the absence of relevant facts or sufficient data, generalisation seems to be a search for the will-o'-the wisp. Under the circumstances one is tempted to build theories on a collection of fictions foisted on an unusual man—" the economic man " or a unique situation such as the " equilibrium " situation wherein supply creates its own demand or demand exactly exhausts the market supply. In a concrete situation which involves a social setting of received habits of behaviour, the condition of rationality is far from being realised. In an economy

with a large non-monetised sector, exchange process is weak, circumscribed or rather mutilated and restrains the tendency to realise a full equilibrium i.e. equation of supply and demand. Price factor is very often ineffective to bring forth the necessary supply. Demand conditions are too weak in the absence of necessary purchasing power in order to clear the market. Or again due to an inadequate and inefficient productive system excess demand might be a continuous phenomenon in an economy with basic shortages. These are facts projecting situations which deviate rather too much from textbook equilibriums or natural harmonies. Here is the need for facts or the objective counterpart of the visionary or wishful symbols, impelled by the thirst for reality. Economic valuation without the support of relevant facts is pleasant enough to visualise but is of little avail in practice. It is just like building a magic castle without solving even an inch of housing problem.

Social Planning and the Thirst for Facts :

Economics, is a social science (Marshall). With increasing material progress, the economic organisation is getting more and more complex. There is more division of labour and specialisation and the consequent loss of individual self-sufficiency. There is more and more interdependence direct or indirect. Economic interdependence is not a bad thing but it has transformed the functions of administering scarce resources into a social problem. Means must be sought and measures undertaken in order to satisfy the wants of an organized society or public household. At the same time it becomes a difficult problem to discover a single criterion or principle (*Summum bonum*) as the basis of public policy. It might be possible to find a single peaked preference curve for an individual but society is not a combination of identical individuals and the process of aggregation therefore is full of pitfalls. The problem becomes rather complex when one has to correlate individual values with social choice or public policy. The transition from individual valuation to social valuation is neither clear nor smooth, restrained by the limitations of interpersonal comparisons and interpersonal weights. And the path is difficult to trace and the consummation is even more difficult to locate.

But the times have changed and the pattern of thought is also changing. Having failed to discover continuous harmony existing between private interest and public interest and having succeeded in establishing the existance of divergence between private net product or advantage, the need for a public of subordinating private interest to public interest, is amply justified. Consequently, while earlier economists spent a great deal of their time in an attempt to discover and formulate a ' pure ' theory of the laws of valuation and choice, as these operate in the minds of the individuals, the enormous growth of social planning under the auspices of a welfare state today, tended to move the emphasis towards the search for ' norms ' for the valuation of eco-

nomic policies. This is the chief problem in the normative aspect of economic studies (welfare economics) which tends to prescribe in contrast to the positive aspect which tends to explain things as they are. In this context it is not possible to ignore the passion for raising the status of economics to that of a "Science Pure" (Lionel Robbins) or his verdict that "economics is neutral as between ends" and there is nothing worthwhile to say about policy recommendations. But in an age of socio-economic planning, one wonders why we are not amenable to a compromise solution of finding approximations to the ideal social policy and a policy recommendation justified by the eloquent testimony of facts.

Yes, a public economic policy has come to stay. Many states, including our own are committed to a policy of public welfare and social planning. The need for search and research for facts, their collection and analysis as a basis for economic valuation or even suggestion of a social policy is to be taken for granted. Economic investigations and a careful analysis of the data thus collected from such investigations will indicate the frequency distribution of individual or social valuations and then the divergence between the actual and the ideal or the possible is also clearly indicated. This information will help to formulate public policies. In the context of economic planning, therefore, economic valuation must be continuously and vigorously tested by individual and social facts.

Scientific Process is Bilateral:

In character the scientific attitude towards problems of economic life demands a proper valuation based on facts particularly for the aggregative type of action. For, the very nature of scientific process is bilateral. It has been long recognised that the grand aim of all sciences is to cover the greatest number of facts by logical deduction from the smallest number of hypothesis or axioms. Though the procedure has been accepted as the path of development of both social and physical sciences, unqualified success is reserved for the latter only. But the possibilities of the social sciences have not yet been tried or properly assessed. Wundt's Leipzig Laboratory (Wilhelm Wundt 1832-1920) was a triumph of the noble passion for measurable facts in order to complete the scientific process even in the field of mental sciences—psychology. It has been recognised that the quantitative nature of scientific analysis largely explains the high measure of success attained by physical sciences. Even the fruitfulness of 'pure' mathematics consists in relation to its 'applied' counterpart. Mathematical formulæ explaining certain laws in physics or chemistry acquire additional significance when brought into relationship with observed phenomena. The establishment of such a relation is a definitive and decisive step in the scientific process and is known as the coordinating definition in natural sciences. Empirical studies based on facts and still more reliable facts laid the sovereign foundation of a scientific age with the prin-

ciple of "no trusting without testing" as its cardinal doctrine. Economics claiming itself to be a science (social or otherwise) has to justify the status claimed or aspired for, in constant demand for facts and continuous appeal to facts. It is good to remember the assertion of a contemporary school of philosophy (logical positivism) that those questions of truth which can be decided without appeal to experience are either mathematical or linguistic. What is suggested now is that a synthetic valuation emanating from empirical studies has to supplement and strengthen the theoretical framework in economics in order to complete the scientific process. Gustav Schmoller, a leader of the German historical school in the late 19th century was among the first to emphasise collection of facts as a necessary supplement for theoretical studies in economics. He asserted that deduction and induction are "both needed for scientific thought as the right and left foot are both needed for walking."

Causal Analysis :

Facts are most useful in a causal type analysis which has to be the basis of right policy of action. Lack of relevant and adequate data is the chief limitation in a causal type of analysis. Assertions and counter-assertions by politicians and economists about public policy will not help to move forward, perhaps hinder. Hence data relating to or helping causal type of analysis is required for all types of situations. Even an effort to acquire experimental data with all its limitations will be a good step in the right direction. Causal type of analysis helps to isolate and identify causes for good or ill. This is the first stage in the evolution of a public policy.

What is needed is not any array of facts but logical array of facts indicating causal relationship. Sometimes in the collection of data, it may be difficult to control interfering causes or to analyse intermixture of effects. The problem is similar to that raised in Gestalt psychology—wherein no individual element or any set of elements is perceived, appraised or interpreted individually (a sound in song, a colour in a picture etc.). In economic analysis availability of data might help to perfect one's own technique to deal with such situations. The usefulness of causal analysis may be seen from the following table:—

***Fertiliser inputs to corn yields in North Carolina (U.S.A.)**

Lbs. of nitrogen fertiliser per acre	Yield per acre Normal weather	Dry weather
0	29	27
40	55	45
80	76	53
120	88	56

The causal factor encouraging productivity are being isolated and evaluated. This will indicate the direcction of thought and action.

* E. O. Heady—Economics of agricultural production and resources. p. 59.

In the words of Marc Boch " Revealing the germ of historical development is quite different thing from uncovering the causes of germination." Under what conditions a seed germinates and grows well, are necessary knowledge in the field of application.** But in the field of Social Sciences the methodological limitations involved need to be underlined. The economic behaviour of man is not so readily amenable to causal analysis, meaning deterministic. The intelligent goal-oriented man need not be consistent in his behaviour over time. In the physical Sciences, present event is always determined by past event or events but in human behaviour present action is oriented towards future objectives and is determined by those future ends. Further to assume the causality principle in human behaviour is to deny the known fact that human beings respond meaningfully to religions or moral imperatives. It is to be admitted that every individual is unique in some way or other and rather complex in certain other respects. In social causation the cause need not disappear with the result, it may be persistent or cumulative. Hence a one directional cause and effect relationship is rather difficult to establish as it is feasible in the physical sciences. Nevertheless a selective start may be made in certain fields of human action with the aid of facts reliable and responsible.

But one has to be cautious in using quantitative data. (1) usefulness of the analysis depends on the quality of the data collected, (2) generally statistical measurements are employed to assess and analyse the data. Afterall statistics is a science of aggrerates or group properties. Homogeneity assumption of the units comprising the group, is an inherent limitation of the technique. (3) There is a likelihood of mistaking part for the whole as complete enumeration is often beyond the reach of human endeavour. As J. S. Mill puts it " In the study of man and society the besetting danger is not so much of embracing falsehood for truth as mistaking part of the truth for the whole." (4) Any conclusion arrived at therefore is bound to be tentative and at least an approximation. Valuation based on facts even with a margin of error is preferable to imaginative flights of fancy or projections of personal enthusiasm. One is encouraged by the famous dictum of Einstein, about the queen of all sciences. " In so far as mathematics is about reality it is not certain, and in so far as it is certain, it is not about reality." However, economic values get sharpened when confronted with facts, for the essence of any scientific inquiry is to reduce it to a statement of relationship i.e. testing of a hypothesis on the evidence furnished by facts.

Value Judgement :

Next stage in the process is evaluation of such relationship for the purposes of policy making. It is not fair for a human science (Economics) not to use its findings to solve the economic problem of

** " Readings in Enterprise and Secular Change " Quoted p. 565.

life—scarcity. In effort to formulate policy, the biggest of all problem comes in that of value judgement. Value judgement arises wherever one finds recommendatory or persuasive force or influence in a statement. The valuation might be aesthetic when one says that "This picture is revolting." It becomes an ethical value judgement when one says that "Stealing is a bad thing." There is economic valuation when we state that "Full employment is the goal of our economic policy and labour intensive methods of investment should be undertaken in a country with unlimited supplies of labour." There is an implicit policy recommendation emanating from an evaluation of alternatives. And choice criterion has been suggested. The value judgement employed in economic analysis is of the comparative type rather than of the absolute variety. It is also in the indicative mood. However, we have to accept some criteria in order to be realistic in our pursuits of public policy having once agreed the need for a public policy. In the words of Samuelson "without norms, normative statements are impossible." Hence a tentative agreement among economists about the criteria of economic values has to be arrived at as a sort of happy compromise in order to get out of this "scientific" impasse. The quest for measurable facts might provide an additional driving force in that direction. The use of empirical analysis as an aid to economic valuation is at once light throwing and fruit bearing. Value judgement has come to stay in some form or other. "Getting rid of value judgements would be throwing the baby away with the bath-water. The subject is one about which nothing interesting can be said without value judgement, for the reason that we take a normal interest in welfare and happiness."†† In the context of social planning initiated for the purpose of creating an egalitarian society with equal rights and opportunity for all we cannot afford to ignore the implications of economic values tested and confirmed by facts of the situation, to the extent they are relevant and feasible. Economics as a science is interested in the organisation of the understanding of facts but ultimately dealing with welfare or satisfaction, has to evaluate the means and to economise the means which are limited, in order to realise certain well defined ends. Fact and valuation must go together and very often scarcity values have to be further justified by human values in order to discover proper criteria of policy for the well being of the community.

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Effects of Direct Taxes on Equity-Investment

MANY experts in Public Finance have explained from time to time adverse effects of direct taxes on capital-formation. Hugh Dalton, for instance, has stated that a sharp check to the desire to work and

†† Little-Critique of Welfare Economics p. 82.

save at the higher levels of income, caused by a very high rate of tax, will increase more rapidly than the rate of tax. It is also believed that taxes severely affect capital-formation because they reduce investors' and corporations' capacity to save and invest. American Economists like Alvin H. Hansen and J. W. Angell have advocated a downward revision of direct taxes particularly in a dynamic expanding economy enjoying vigorous booms. In India also, for many years some Economists, businessmen, industrialists, trade associations etc. have been advocating a downward revision of direct taxes for rapid industrialization. Some have even gone to the conclusion that heavy tax burden has completely destroyed investors' ability to save and severely impaired basic incentives to work and save. It is, therefore, very interesting to find out how far changes in direct taxes in India, during the last two decades have affected equity-investment. In the opinion of Nicholas Kaldor it is almost impossible to assess the effects of certain important features of Indian tax system on capital formation after taking into account the number of different provisions affecting the rate of company-taxation and the numerous qualifications attaching to each. Moreover, due to the non-availability of adequate and reliaible statistics there is no alternative but to use figures regarding paid up capital changes and variable yield security price indices as indicators of equity-investment. In this small article, therefore, a modest attempt has been made to study only general and broad effects of direct taxes on equity-investment.

War and Early Post-war Years (1938-1947):

Government used taxes and controls for discouraging investment in many civilian industries during war years. The main objective of war-time fiscal policy was to supply as much finance as possible for fighting war. Heavy direct taxes on individuals and corporations were imposed and increased from time to time continuously. By the end of the war and for some years even thereafter, maximum combined rate of income-tax and super-tax was 15¼ As. per rupee for slab of income more than Rs. 5 lakhs. Excess profits tax was imposed at the rate of 50% on the excess profits, earned during 1st September 1939 to 31st March, 1941, and at the rate of 66.2/3% on the excess profits, earned during 1st April 1941 to 31st March 1956. Thereafter, it was replaced by a milder tax, business profits tax. High rates of direct taxes were maintained even during early post-war years for combating inflation. As a result of great tax burden, there was an unprecedented absolute as well as relative increase in the collection of direct taxes from individuals and corporations. During the period, "effective rate" of direct taxes on companies increased from 20% to 73%. Inspite of this, by the end of the period variable yield security index was more than double and new share issues of Company's were more than eight times of those in pre-war years.

Post-Partition Years (1947-1955):

The main objective of fiscal policy during post partition of period was of encouraging capital-formation. Direct taxes on individuals and corporations were, therefore, reduced. Even business profit tax was abolished in 1949. By 1950-51 the maximum combined rate of income-tax and super-tax was reduced to 12½ As. a rupee for incomes above Rs. 1½ lakhs. Moreover, various concessions like high depreciation allowances, loss-offsets, tax-holidays to small and new co.s, development-rebates and rebates on undistributed profits were given for many years after the partition. As a result of all these measures "effective rate" of direct taxes on companies was reduced from 73% to 44% during the period. In spite of such a substantial reduction in tax burden, new share issues and general price level of variable yield securities went down by more than 50%. Thus, the objective of the post-partition taxation policy of encouraging capital formation does not appear to have been fulfilled.

Recent Years (1955 onwards):

During recent years one of the most important objectives of the taxation policy has been to raise as much funds as possible for financing the plan. Finance Act 1955 raised super-tax rates. In 1956-57, super-tax rates on incomes above Rs. 70,000 were raised further and the maximum marginal rate of tax on maximum income was raised to 14 As. a rupee. In 1957-58, higher surcharges were levied on unearned incomes and the rates of corporation tax and of income-tax of companies were raised to 20% and 30% respectively. Moreover, other new taxes like expenditure tax, capital gains tax and wealth tax were imposed. In the next year, gift tax was levied. Tax relief, rebates and concession have not increased much and appear to be quite small as compared to the great increase in direct taxes. The overall burden of direct taxes on companies and individuals during recent years has become heavier than that during post-partition years.

Moreover, dividend taxes have reduced the yield in form of dividents from equity-investment. In April 1956, Government imposed an additional super-tax at the rate of 2 As. a rupee on the amounts of dividends distributed between 6% and 10% of paid-up capital and 3 As. a rupee on the excess over 10%. Moreover a tax of 12.5% was levied on the issue of bonus shares. It was raised to 30% in the next year. Since excess dividends were taxed, rebate of one anna a rupee in respect of income-tax on distributed profits, was withdrawn. By the budget of 1957, however, the excess dividend tax was reduced to 10% on the distribution of dividends between 10% and 18% and to 30% on distribution of dividends over 18%. Budget for 1960-61 has abolished this tax.

During recent years, there has been great increase in income taxes and corporation taxes as well as in their rates. The "effective rate" of

direct taxes of companies has increased from 44% in 1954-55 to 52% in 1958-59. Yet new share-issues are fairly at a high level. During the last two years as a result of a boom in new issues market, many new share-issues have been oversubscribed. The variable yield security index, which was 119% in 1954-55, is now at 170%, the highest level during post-independence years.

Conclusion :

Equity-investment and burden of direct taxes went on increasing during war years. In early postwar years even though burden of direct taxes was very heavy, equity-investment was at its peak. During post-war years Government's efforts to encourage private industrial investment by tax reductions and taxconcessions do not appear to have been much successful. Recently, even though Government has increased the tax-burden, equity-investment is increasing very rapidly. It is true that some times tax-increases were enacted when investors' attitude was optimistic and tax decreases carried out when it was pessimistic. But even during such years, increase or decrease in taxes has not much affected optimistic or pessimistic attitude which the investors had already acquired. In fact, it appears that instead of checking such expectations of investors, taxes have encouraged and even aggravated these expectations.

My another empirical study has indicated that a major portion of equity-investment is in the shares of expanding new companies and majority of equity-investors are those who can afford to take risk or have dominant capital-appreciation motive. As such capital-appreciation motive is very dominant in inflationary years and also capital-appreciation benefits obtained by starting new companies or by investing in such companies are substantial, increased taxes, do not effect equity-investment very severely. Moroever, in times of widespread expectations of inflationary conditions, losses are feared less and, if suffered, can be easily set off against gains and, therefore, even high taxes do little to reduce risk-taking and discourage what is traditionally called "risky" investment. As taxes do not have great influence on investors' hope of capital-appreciation during inflationary periods and fears of capital-depreciation during deflationary periods, they do not have much influence on personal equity-investment. Due to the limitations of data and impossibility of carrying out "controlled experiments," it is not possible to find out whether "profit maximizing decisions are independent of the income-tax structure as long as the marginal tax rate is less than unity." Yet, if taxes have some influence on equity-investment, our study points out that there must be more powerful factors whose influence has neutralised such effect of taxes on equity-investment. This does not mean that in India there is no case for reducing direct taxes for encouraging capital-formation.

Bombay. S. B. SAKHALKAR

Direct taxes and equity-investment.

(Amounts in crores of rupees)

Years.	Corporation taxes	Taxes on incomes other than Corporation taxes.	Proportion of corporation taxes in tax revenue. (percent)	Proportion of taxes on incomes other than corporation taxes in total tax revenue. (percent).	Direct taxes on J.S. Co.s etc.	Proportion of direct taxes on Co.s in net profits of Co.s (percent)	Proportion of direct taxes on Co.s in total tax revenue. (percent).	Variable yield security price indices (base 1938-39 = 100)	Changes in paid-up capital of J.S.Co.s (excluding Govt. Co.s)
1	2	3	4	5	6	7	8	9	10
1938-39	2·04	15·24	2·67	19·96	7·45	19·73	8·76	100·0	11·22
1939-40	2·38	17·03	2·85	20·40	8·04	21·71	9·73	113·3	13·29
1940-41	4·14	21·79	5·09	26·80	10·26	21·65	12·62	110·4	5·90
1941-42	11·66	32·40	11·07	30·77	19·08	33·82	18·12	121·3	15·61
1942-43	31·40	54·36	23·12	40·03	45·21	46·28	33·29	130·3	10·94
1943-44	51·28	77·69	26·54	40·21	76·11	56·59	39·39	171·3	17·61
1944-45	84·22	107·02	29·99	38·10	109·83	65·08	39·10	185·5	34·63
1945-46	75·73	102·30	24·32	32·86	113·49	66·98	36·45	207·6	35·87
1946-47	68·85	91·74	22·62	30·14	108·11	72·86	35·52	252·5	55·23
R1947-48	40·43	74·57	21·08	38·88	87·29	51·68	45·41	181·5	90·09
1948-49	62·26	119·50	17·21	33·04	95·25	56·20	26·33	136·5	58·75
1949-50	39·53	121·59	11·06	34·03	88·80	47·84	24·85	115·4	95·41
1950-51	40·49	132·78	10·01	32·81	75·12	51·48	18·57	124·2	51·68
1951-52	41·41	146·19	8·07	28·51	95·55	47·78	18·63	127·8	73·17
1952-53	43·80	141·43	9·86	31·85	103·47	51·38	24·99	107·3	42·14
1953-54	41·54	122·84	9·88	29·21	97·56	44·85	23·20	109·1	42·64
1954-55	37·33	122·26	8·20	26·86	76·83	43·96	19·07	128·9	11·65
1955-56	37·04	131·35	7·67	27·18	82·45	43·82	17·00	138·8	40·40
1956-57	51·18	151·74	8·97	26·59	108·49	45·98	18·98	138·3	46·98
1957-58	56·13	163·70	8·12	23·68	110·50	40·30	15·98	114·5	38·30
1958-59	54·33	172·01	7·71	24·43	137·39	51·66	19·51	150·4	42·30
1959-60	78·00	152·00	10·15	19·78	N.A.	N.A.	N.A.	170·1	N.A.

N.A. = Not available.
R = Revised estimate

Sources : (*i*) Budgets. ——Ministry of Finance.
(*ii*) Income-tax revenue statistics-Incometax Dept.
(*iii*) Reports on currency and Finance-Reserve Bank of India.
(*iv*) Monthly blue books on J.S.Co.s in India. Dept. of Company law Administration.
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